

How important is the CERA recovery strategy to Canterbury refugees?

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Abstract

For the people of Christchurch and its wider environs of Canterbury in New Zealand, the 4th of September 2010 earthquake and the subsequent aftershocks were daunting. To then experience a more deadly earthquake five months later on the 22nd of February 2011 was, for the majority, overwhelming. A total of 185 people were killed and the earthquake and continuing aftershocks caused widespread damage to properties, especially in the central city and eastern suburbs. A growing body of literature consistently documents the negative impact of experiencing natural disasters on existing psychological disorders. As well, several studies have identified positive coping strategies which can be used in response to adversities, including reliance on spiritual and cultural beliefs as well as developing resilience and social support. The lifetime prevalence of severe mental health disorders such as posttraumatic stress disorder (PTSD) occurring as a result of experiencing natural disasters in the general population is low. However, members of refugee communities who were among those affected by these earthquakes, as well as having a past history of experiencing traumatic events, were likely to have an increased vulnerability.

The current study was undertaken to investigate the relevance to Canterbury refugee communities of the recent Canterbury Earthquake Recovery Authority (CERA) draft recovery strategy for Christchurch post-earthquakes. This was accomplished by interviewing key informants who worked closely with refugee communities. These participants were drawn from different agencies in Christchurch including Refugee Resettlement Services, the Canterbury Refugee Council, CERA, and health promotion and primary healthcare organisations, in order to obtain the views of people who have comprehensive knowledge of refugee communities as well as expertise in local mainstream services.

The findings from the semi-structured interviews were analysed using qualitative thematic analysis to identify common themes raised by the participants. The key informants described CERA's draft recovery strategy as a significant document which highlighted the key aspects of recovery post disaster. Many key informants identified concerns regarding the practicality of the draft recovery strategy. For the refugee communities, some of those concerns included the short consultation period for the implementation phase of the draft recovery strategy, and issues surrounding communication and collaboration between refugee agencies involved in the recovery.

This study draws attention to the importance of communication and collaboration during recovery, especially in the social reconstruction phase following a disaster, for all citizens but most especially for refugee communities.

Glossary

Adversity: “the experience of life events and circumstances which may combine to threaten or challenge healthy development” (Daniel et al, 1999, p.105).

Asylum Seekers: are those who have claimed to be refugees after crossing another country's border and who are awaiting recognition from their new adopted country.

Canterbury Earthquake Recovery Authority (CERA): is the agency established by the New Zealand government to organise and facilitate the rebuilding of Christchurch and the immediate areas subsequent to the 22 February 2011 earthquake (CERA, 2011).

Coordinated Incident Management System (CIMS): is a basic framework that was primarily designed for all levels of emergency management and can be used in various emergency incidents as well as determining the scope of the incident response (New Zealand Fire Service, 1998).

Coping: “...constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as exceeding the resource of the person” (Folkman, 1984, p.141).

Family reunification: “..all members of a family group who are living as a family and who demonstrate a long term emotional, physical or financial dependence upon the family unit”. (UNHCR 2001, p.03).

Incident Command System (ICS): is a standardised emergency management tool established by the California State Department in the 1970s to meet the demand for small or large emergency or non-emergency responses (Annelli 2006).

National Incident Management System (NIMS): is an incident response management strategy developed by the United States of America Department of Homeland Security in 2004 to provide an effective nationwide framework within which all government and private agencies work together to establish and manage disaster recovery (Annelli 2006).

Post-Traumatic Stress Disorders (PTSD): delayed and/or protracted response to a stressful event or situation (either short- or long-lasting) of an exceptionally threatening or catastrophic nature, which is likely to cause pervasive distress in almost anyone (WHO, 2007, ICD-10 F43.1).

Quota refugees: are people whose refugee status has been recognised by UNHCR and been accepted for resettlement in New Zealand.

Recovery: “ the coordinated effort and processes to effect the immediate, medium, and long term holistic regeneration of a community following a disaster” (Canterbury District Health Board, 2010, p.04).

Refugee: “any person who, owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.” (UNHCR 1996, p.16).

Resilience: a “measure of the persistence of systems and their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables” (Cutter et al 2008, p.599).

Spirituality: “... an underlying dimension of the conscious in which an individual strives for meaning, union with the universe and all things, and stresses the notion that spirituality extends to a power beyond us” (Rowe and Allen, 2004, p.62).

Standardised Emergency Management System (SEMS): an organisational instrument used on a local or national level to ensure coordination of disaster management (www.vetmed.ucdavis.edu).

UNHCR: United Nations High Commissioner for Refugees.

Methodology glossary

Qualitative research: “any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification”. (Golafshani, 2003, p.600)

Quantitative research: based on the use of numerical data from a sample of the population of interest, often to recommend a final course of action.

Thematic analysis: a conventional practice in qualitative research which focuses on themes and patterns of behaviour (Anderson, 2007).

CHAPTER ONE: Introduction

“For many of us the earthquakes have shaken the ground we stand on not just physically, our whole lives have changed as we navigate homes, workplaces, schools, daily schedules.....” (Christchurch City Health and Wellbeing Profile 2011, p.09)

On the 4th of September 2010, at 4:35am local New Zealand time, the city of Christchurch experienced an earthquake of magnitude 7.1 on the Richter scale. The epicentre of the earthquake was 40km west of Christchurch at a depth of 11km (Geonet, 2010). Many residents suffered serious damage to their property, with thousands of homes temporarily or permanently uninhabitable, but miraculously no fatalities were reported. Following the September 4 earthquake, there were ongoing aftershocks which ranged between magnitudes 2 and 5 on the Richter scale.

Approximately 5 months later, on 22nd February at 12:51pm the city was devastated by a second major earthquake, measured at 6.3 on the Richter scale, the epicentre 10 km south-east of Christchurch at a depth of just 5km (Geonet, 2010). The February earthquake caused widespread destruction to property, including the destruction of much of the central business district, and a final death-toll of 185, making it the second-deadliest natural disaster recorded in New Zealand (New Zealand Police, 2011).

According to Christchurch Mayor Bob Parker, *“people's spirits in some ways are starting to just sag a little more as the reality of what's in front of all of us really comes back. What about the job? What about the business? What about the schools? When is this going to be fixed, when will life get back to normal?”* (BBC World News Asia-Pacific, 2010). Indeed the damage to homes, roads and community facilities

such as schools, libraries and open spaces had a profound effect on people's lives. The City Health Profile 2011 survey looking at the impact of the earthquakes on the quality of life in Christchurch indicated great concern among local residents. For instance, the 22nd of February earthquake caused some schools to close temporarily and share other schools' facilities, which in turn disrupted the academic curriculum, lesson flow and assessment time frame for displaced students and for students of the host schools. Furthermore, the Council of Social Services in Christchurch (2011) reported that limited housing insulation and heating during the winter following the February earthquakes would result in increased illness especially among residents living in compromised conditions. Refugee communities are part of the spectrum of Christchurch residents affected by the earthquakes.

Since the mid-19th century, and following World War II, refugees have been arriving in New Zealand from troubled locations worldwide following ongoing civil unrest and economic instability (Guerin, Abdi & Guerin, 2003). There has been a steady growth in the refugee population in New Zealand of up to 750 refugees each year, due to the increase in humanitarian crises worldwide causing refugees to fear for their lives and the safety of their families (Ravenscroft, 2008). Due to their past experiences, former refugees may be particularly vulnerable to the potentially negative psychological effects the experience of a natural disaster, such as an earthquake, can cause. Research has consistently documented that refugees are more likely than the general population to experience post-traumatic stress disorder (PTSD) due to past traumatic events or political violence (Armen et al 2000). Other studies have investigated whether there is a link between a range of pre-migratory, migratory and post-migratory factors and mental health in refugees (Te Pou 2008). Those factors include:

- 1 past traumatic experiences,
- 2 language barriers,
- 3 ineffective social networks,
- 4 family resettlement,
- 5 discrimination,
- 6 levels of education, and
- 7 socio-demographic and socio-economic background.

However, the outcomes of many of these studies vary and the interpretation of the findings could differ due to the diversity of refugee communities, cultural differences or methodological error (Hollifield et al., 2002).

1.1 Aim and Objectives

The aim of this thesis was to develop an understanding of how Canterbury refugee communities can be part of the Canterbury Earthquake Recovery Authority (CERA) recovery strategy. Accordingly, this study was designed to investigate the views of refugees on the CERA Christchurch earthquake draft recovery strategy by interviewing key informants who work closely with refugee communities.

The objectives were to gather information on:

1. how well the draft recovery strategy addressed the needs of refugees and
2. how well the draft recovery strategy benefits refugee communities.

The aim of the qualitative method used was to gather information rather than to test theories.

1.2 Brief overview on refugees' background

1.2.1 Who are the refugees?

Refugee communities are part of the spectrum of Christchurch residents affected by the earthquakes. The definition of “refugee” according to the United Nations Refugee Convention, 1951 is;

“any person who, owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.” (UNHCR, 1996, p.16).

1.2.2 Asylum-seekers

Unlike refugees, asylum seekers (also known as “*convention refugees*”) are those who have claimed to be refugees after crossing another country’s border and who are awaiting recognition from their new adopted country (Cotton 2005). In 2011 over 900,000 people claimed asylum seeker status worldwide. The United Nations High Commissioner for Refugees (UNHCR) works with countries to adopt a more effective approach to reduce the asylum seekers crisis (see section 2.3). Currently, on average, 1555 asylum seekers apply for refugee status in New Zealand each year, of which approximately 12% of applicants are successful in their application (Cotton 2005). Those who are successful in their application will have the same rights as refugees.

1.2.3 United Nations High Commissioner for Refugees (UNHCR) mandated quota programme

The quota programme was designed for people who had been classified as refugees by the United Nations High Commissioner (UNHCR) (Ministry of Health, 2001). Those people are eligible for resettlement in New Zealand under “*the annual Refugee Quota Programme*”. Currently, New Zealand is one of a small pool of countries committed to an annual intake of refugees under the quota programme and accepts up to 750 quota refugees per year (Ministry of Health, 2001). The New Zealand quota refugee programme focuses on three main groups, protection cases including family reunification (600); women-at-risk (approximately 75); and medical/disabled (approximately 75) (Ravenscroft, 2008).

Once the refugees enter New Zealand, they undertake a six week orientation programme at the Mangere Refugee Reception Centre (MRRC). The MRRC provides support for the new refugees so they can familiarise themselves with the New Zealand culture and offers medical screening, psychological services and English language classes as well as information on New Zealand laws and regulations. On leaving the MRRC, the New Zealand government organises an emergency benefit and a one-off re-establishment grant worth \$1,200 to the newly resettled refugee families to start their new life in New Zealand (Ravenscroft, 2008).

1.2.4 Humanitarian migrant intake

In addition to the refugee and asylum processes, the New Zealand government distributes 10% of its total newcomer admissions to the humanitarian category (Patti, 2008). The temporary or permanent humanitarian admission is for those who have suffered from domestic violence or environmental disaster, and provides a temporary protected status for individuals from countries where there is armed conflict.

1.2.5 Family reunification

The United Nations High Commissioner for Refugees (UNHCR) (2001) defines family as, “*all members of a family group who are living as a family and who demonstrate a long term emotional, physical or financial dependence upon the family unit*” (p.03). Using this definition in terms of government policy, there is no doubt that family reunification for refugees is fundamental to successful resettlement. Despite the importance of this subject, as well as the government’s response to it, there are concerns regarding the policies in place to ensure family reunification for former refugees (Refugee Family Reunification Trust, 2009). In part, these concerns are due to the lack of data and research completed investigating the impact of family reunification policies on former refugees’ welfare and ability to settle. Also of concern is the definition of “family” under the, New Zealand’s family reunification policy that it is incompatible with the UNHCR definition. For example, the present policy definition does not cover the impact of war and displacement on families from a cultural and emotional perspective (Refugee Family Reunification Trust, 2009). The UNHCR emphasised the importance of family reunification in regards to refugee resettlement as a “*fundamental unit of society*” and urged all nations to value family unity and support family reunification (UNHCR, 2004). Nevertheless, the New Zealand government offers opportunities for family unification by permitting former refugees with citizenship or permanent residents to sponsor family members. The ultimate goal of the family unification programme is to provide a strong and effective supportive environment for resettled refugees.

1.2.6 Refugee population trends in Christchurch

In terms of ethnicity, Christchurch has a reasonably homogenous population with 77.4% of the Canterbury region belonging to the European ethnic group, compared with the whole population of New Zealand (67.6%) (Statistics New Zealand, 2006).

Despite the fact that Christchurch's population is predominately European, the proportion of other ethnicities has been increasing noticeably. For example, the Pacific Island population as well as Asians and other ethnicities increased more than two fold from 1991 to 2006 (from 4.1% to 11.0%) (Ravenscroft, 2008).

However, there are no definitive data on the Christchurch refugee population and trends. The reason for this is that the refugee population is categorised as "other groups" in the New Zealand Census. Nevertheless, nearly 2,000 refugees have moved to Christchurch in the past decade (Ravenscroft, 2008). Below is an estimation of the refugee population in Christchurch from 1996- 2010 (Table 1).

Table 1: Quota Refugees Resettled in Christchurch 1996-20101.

| Year | Population |
|--------------|-------------------|
| 1996/1997 | 19 |
| 1997/1998 | 95 |
| 1998/1999 | 85 |
| 1999/2000 | 66 |
| 2000/2001 | 118 |
| 2001/2002 | 143 |
| 2002/2003 | 89 |
| 2003/2004 | 83 |
| 2004/2005 | 197 |
| 2005/2006 | 80 |
| 2006/2007 | 123 |
| 2007/2008 | 95 |
| 2008/2009 | 121 |
| 2009/2010 | 102 |
| Total | 1416 |

1 Source: Canterbury Refugee Service, 2011

1.3 Summary

As a member of the United Nations Refugee Convention, 1951, New Zealand has had a long history of welcoming refugees from around the world. Refugees can come to New Zealand through the United Nations High Commissioner for Refugees (UNHCR) as asylum-seekers, through the humanitarian category, or family reunification programmes, or as quota refugees (Ministry of Health, 2001). In addition to their past experiences of traumatic events and surviving them, refugees face additional challenges similar to other ethnic minorities such as language difficulties, separation, and loss of identity and ownership. As a result, the New Zealand government and other non-government agencies have supported refugees and continued to promote social harmony and cultural understanding. There are no accurate figures on the size of the refugee population living in Christchurch, however, in spite of their status; refugees arrive with particularly varying needs. As a result of the September 4 and February 22 earthquakes and subsequent aftershocks, which caused widespread devastation to the city of Christchurch, those needs have become even greater.

Consistent with the aim of this thesis, which is to obtain a better understanding of the CERA draft recovery strategy and how it can benefit refugee communities in the eyes of local key informants who work closely with these communities, the next chapter explores the existing literature that looks at the impact of natural disasters on mental wellbeing. This includes the impact of natural disasters on the mental wellbeing of the general population including refugees, with a focus on examples of coping mechanisms at an individual level, and recovery strategies at an international and national level. Chapter Three explores detailed methodological aspects related to the study, while Chapter Four presents the main themes emerging from the study in

relation to the available literature. Finally, Chapter Five discusses the implications of the findings with suggested recommendations.

CHAPTER TWO Literature review

2.1 Introduction

In this chapter, an overview of the effects of experiencing earthquakes in terms of psychological wellbeing is presented. The initial part of this chapter reviews the existing literature on the coping mechanisms of individuals and their communities in response to adversities (such as earthquakes), before exploring the association between experiencing earthquakes and subsequent posttraumatic stress disorder (PTSD) at an individual and societal level. Also in this section, literature on the prevalence of PTSD in the general population and in refugees is presented. This is followed by a brief outline of societal responses to disaster, achieved by reviewing international and national and local recovery strategies.

2.2 Individual response to adversity

Adversity affects individuals on a regular basis, both nationally and globally. The effects of experiencing adversity differ for each individual, as the strength to face a particular adversity for the most part is dependent on individual circumstances. Adversity is defined as a “*state of hardship or affliction, misfortune*” (Williams, 2003, p.07). Daniel et al (1999) further expanded on this definition when working with children by stating that adversity is “*the experience of life events and circumstances which may combine to threaten or challenge healthy development*”(p.105). For the most part, adversity can be classified into general and/or specific situations (Williams, 2003). The hardship and emotional stress caused by an unexpected situation, such as a disaster that affects many lives, is an example of a general situation. Meanwhile, specific situations might include the death of a relative or friend or an increased demand for action after adversity (Williams, 2003).

However, it is worth noting that the definition of adversity may slightly differ between adults and children. Much of what has been outlined earlier is largely

applicable to an adult population and investigating the effect of adversity on children is beyond the scope of the current thesis.

The following section explores a range of coping strategies used by individuals, including refugees, in response to adversity. The initial part of the next section defines the concept of coping, before moving on to review the importance of spiritual beliefs, cultural practices, resilience and social support in dealing with adverse situations.

2.2.1 Definition of coping

Folkman (1984) defined coping as “...*constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as exceeding the resource of the person*” (p.141). Thus, coping is the willingness to resolve personal or interpersonal crises, and master the ability to control, manage and adapt to diverse situations that could (negatively) impact on one’s life. However, the ability to successfully cope requires skills and a careful approach to face and overcome adversity. Furthermore, many researchers emphasised that coping is a “dynamic process” that is continuous, requiring time and adjustment. As such it will differ from one individual to another (Folkman, 1984).

Several studies have identified multiple coping strategies; however, agreement on the classification of those strategies has not been achieved (Lazarus, 1993). On that note, individual coping responses are dependent on either, or both, internal and external resources available for coping. Internal resources are defined as personal characteristics that explain each individual’s state of mind and how much they are willing to move on. This inner belief may be driven by spiritual practices, optimism, and/or self-confidence. The proposed strategy used to take full advantage of internal resources is called “*emotional-focused coping*”. Emotional-focused coping “...*is oriented toward managing the emotions that accompany the perception of stress...*”

and can be achieved by seeking help from others to manage distress (Brannon, 2009, p.121).

External factors are defined as the environmental and financial factors, and cultural and social support that surround each individual. Due to the unpredictability of some traumatic events such as earthquakes, the utilisation and mobilisation of both internal and external resources are vital for successful coping. The strategy applied for external resources is called *problem-focused coping*. The purpose of using problem-focused coping is to alter the source of stress (Brannon et al, 2009). In the case of experiencing natural disasters, applying problem-focused coping can help individuals to accept the consequences which results in the minimisation of stress. However, not everyone is able to achieve problem-focused coping since every individual responds to stress differently especially in unpredictable situations as is illustrated with the nature of earthquakes. The severity of the stress is more often than not what determines which strategy to use. Nevertheless, extensive evidence shows that a combination of different strategies is recommended to accomplish a positive outcome (Brannon et al, 2009; Breslau, 2002; La Greca et al., 1998; Pahud, 2008; Sattler et al., 2002; Weemsa et al 2007).

The following sections review the impact of spiritual and cultural practices as well as resilience and social support on coping processes.

2.2.2 Spiritual identity

Spiritual beliefs and cultural practices are significant concepts to many people worldwide. Current literature shows that spiritual and cultural practices have a positive impact on the coping process (Peach, 2003). The word *spirituality* derives from the Latin word “spiritus”, which means breath, air, or wind (O’Neill and Kenny, 1998). In centuries past, philosophers described spirituality as “... *an underlying*

dimension of the conscious in which an individual strives for meaning, union with the universe and all things, and stresses the notion that spirituality extends to a power beyond us” (Rowe and Allen, 2004 p.62). This definition makes use of the subconscious element of human psychology and the willingness of the individual to rely on a higher power (Rowe and Allen, 2004). Hence, to many, spirituality provides inner peace and the acceptance that nothing could be done to prevent some crises, especially if they are natural.

It is important however, not to confuse the concepts of spirituality and religion. Religion is referred to as “an external expression of faith” in which individuals devote their inner belief to God (Rowe and Allen, 2004). Additionally, religion is a type of spiritual experience where the individual obeys a specific code of ethics and worship practices (Rowe and Allen, 2004). Rowe and Allen, (2004) argued that the lack of research on the role of religion and spirituality in the coping process is due to the failure to account for the complex dimension of religion. As a result, more recent studies combined both the concepts of spirituality and religion to reveal how some aspects of religious practice and spiritual belief enhance coping processes (Rowe and Allen, 2004). For example, a 1987 study by Fehring, Brennan, and Keller cited by Rowe and Allen, (2004) looked into the association between spirituality and mood changes among college students. Their study involved collecting information from college students who had left home for the first time, using a spiritual and wellbeing survey. The results of their prospective study showed that those who have strong spiritual beliefs were less likely to suffer from negative mood changes (Rowe and Allen, 2004). Another study confirmed that spirituality helps individuals cope with numerous stress disorders linked to chronic illnesses (George et al, 2000).

2.2.3 Resilience and Social support

For centuries, many advocated the link between positive emotions and good health by stating that positive emotions act as a “buffer” to negative emotions which in part aid in coping (Tugade et al 2004). An example of a positive coping strategy is developing resilience. *Resilience* in psychological terms, is defined as the ability to cope with adversities and exhibiting the capability to face traumatic events, which is a fundamental part of the coping process (Tugade et al 2004). Many studies were conducted in an attempt to define resilience as a coping mechanism. However, resilience continues to be a complex concept to define. Despite the fact that a single definition of resilience is near impossible, one of the best known definitions describing resilience as a coping method was developed by Holling in 1973 (Cutter et al 2008). Holling expressed resilience as a “*measure of the persistence of systems and their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables*” (Cutter et al 2008 p.599).

One of the original research projects on resilience was undertaken by Garmerzy and his colleagues which were cited in Zimmerman & Arunkumar (1994), when they carried out a ten year prospective cohort study to understand resilience among children and their families. They followed 200 children and their families to investigate the impact of life stressors on them. Comparing the results to the general population, they found that more than 50% of the children who lived in difficult conditions were managing well, which raised the importance of resilience and coping (Zimmerman & Arunkumar, 1994).

Many studies have proposed different models to improve individual resilience in response to difficult situations. For instance, Zimmerman & Arunkumar, (1994) developed a model to improve resilience which consists of three essential components:

1 Compensatory model

A compensatory factor is an independent variable that reduces the effect of risk factors to establish a better outcome. For example, when an individual experiences a particular traumatic event such as an earthquake (risk factor), the level of coping (outcome) depends on their level of competence (e.g. resilience). Thus, as the level of resilience as a compensatory variable increases, the effect of the risk factor on an individual will decrease and the level of positive outcome will rise (Zimmerman & Arunkumar, 1994).

2 Challenge model

This model is mainly used to enhance the individual's ability to cope when facing multiple adversities. This is achieved by using recollection of successful coping with a past traumatic experience to enhance individual self-esteem and motivation. However, in order for this model to be successful, one has to adapt to the new challenge faced (Zimmerman & Arunkumar, 1994).

3 Protective factor model

A protective factor acts as an independent variable that affects risk factors to produce a positive outcome (Zimmerman & Arunkumar, 1994). This model consists of two mechanisms that determine its success. The first mechanism is the *risk/productive model* where a factor (e.g. social support and resiliency) acts as a protective variable to reduce the risk factor (stress) in order to improve the positive outcome (coping) (Zimmerman & Arunkumar, 1994). The second mechanism is referred to as the *protective/protective model* where a factor functions as a “*positive outcome enhancer*” (Figure 1). For example, protective factors such as external and environmental support enhance the level of resilience to a stressful situation (i.e. protective model) and, thereby, reduce risk factors

(stress) and improve the overall positive outcome i.e. coping (figure 1) (Zimmerman & Arunkumar, 1994). Therefore, both risk/protective and protective/protective models achieve the same outcome which is to minimise the risk factors to accomplish a positive outcome.

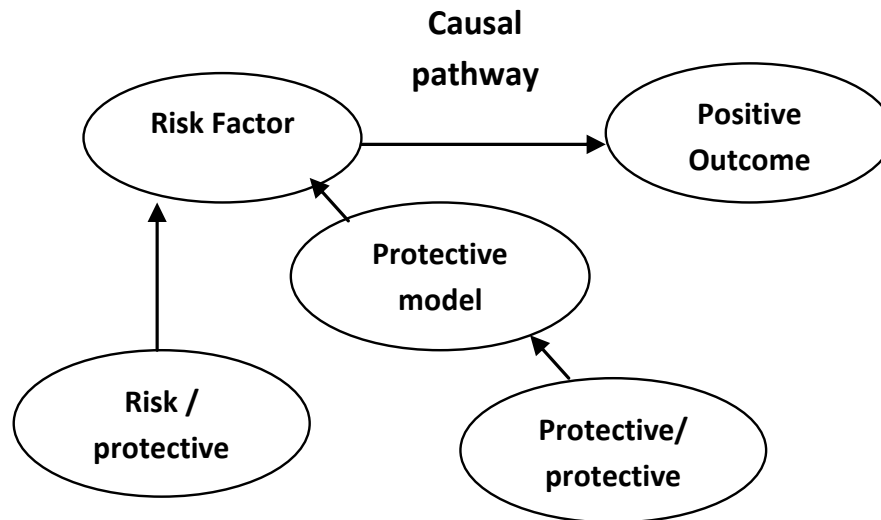


Figure 1: Protective coping model

Contributing to resilience, social support between communities is an equally important factor during the coping process after experiencing a traumatic event(s). By definition, social support is generally referred to as the external support system organised by individuals and/or surrounding communities, aimed to enhance one's ability to cope after experiencing difficult situations (Cooke et al., 1988; Simich et al., 2003). Some studies noted four key classifications that outline social support which include, (1) "*appraisal support*" which provides advice and encouragement from those who previously experienced the same adversity; (2) "*emotional support*" by offering care, sympathy and love; (3) "*instrumental support*" by supplying financial and other services for those in need; and (4) "*information support*" through offering guidance or explaining the information available to help individuals make sense of the difficult situation (Cooke et al., 1988; Liese et al., 1989; Pahud, 2008).

2.3 Refugee response

A number of studies have shown that there is no universal theory to explain how refugees respond to challenges of resettlement, adjustment and natural disasters (Brannon et al, 2009; Caplan & Schooler, 2007; Lazarus,1993). Despite the range of adversities refugees experience, like the general population, they rely on spiritual and cultural identity and social support to enhance their resilience.

2.3.1 Religious and cultural Identity

The holistic approach focusing on the relationship between health and mind is a critical component of healthy life. However, the importance of a holistic approach to overall health is poorly understood. Refugees are often faced with adversities and difficult situations during the resettlement process, but knowing how individual refugees deal with those adversities is essential to provide the adequate help they need.

Studies on the importance of spirituality and belief systems for refugee resettlers revealed that spirituality is an integral part of the refugee coping process (Brune et al, 2002). For instance, Shoeb et al (2007) reported that faith, together with religious practices, were essential components in defining the impression of “*self-identity*” for Iraqi refugees resettled in the United States. Similarly, Brune et al (2002) conducted a retrospective analysis of data collected from 141 refugees resettled in Sweden and Germany to examine the significance of spirituality in psychological coping. The results showed that 73% of refugees who relied on strong belief systems, whether political or spiritual, coped better with their traumas and resettlement stress related situation(s) than those who did not have strong belief systems (Brune et al 2002). Although the finding was statistically significant ($p > 0.001$), a significant limitation to this study was the nature of the data collected. Retrospective analyses are vulnerable to recall bias which may affect the results by either underestimating or

overestimating the true outcome. Also, in retrospective studies the causal sequence may be ambiguous, since both exposure and outcome are measured after the event. Furthermore, the authors could not rule out the effect of confounding² factors such as demographic differences between samples on the result (Brune et al 2002). For these reasons, future prospective studies on this subject will be beneficial to establish a causal association between spirituality, belief and coping.

Alongside spirituality, cultural identity is equally important to many people in general and for refugees in particular. Edward Burnett Tylor (1881) defined culture as a “*complex whole which includes knowledge, belief, art, morals, law, customs, and any other capabilities and habits acquired by man as a member of society*” (Kashima & Gelfand, in press, p.03). Cultural identity is referred to as the influence cultural and traditional practices have on an individual's identity. In 1966, Anthony Wallace described cultural diversity as a “*Maze-way*” in which multiple pathways are created as a result of different beliefs, values, socio-economic or ethnic diversities, which influence individual cultural identity (Aldwin, 2008). Therefore, understanding the significance of cultural identity determines which coping strategies work best for the individual.

In that sense, spirituality and cultural identity highlight the coping strategies used by refugees and also can provide an insight into alternative coping strategies for health providers to consider when dealing with refugees.

² A confounding factor is an independent factor that is associated with both the exposure and the outcome and does not lie in the causal pathway. i.e. a demographic difference between refugees (such as age) could potentially lead to confounding, where the demographic difference is associated with the exposure (spirituality) and also with the outcome (psychological coping), but does not lie in the causal pathway. For instance, if older people are more likely to have strong spiritual beliefs and if coping skills increase with age, this could cause an association between spirituality and coping to be overestimated. The demographic difference could influence the results, if it is not adjusted for or controlled in the study design or analysis.

2.3.2 Refugee resilience and social support

Although refugees are often noted for their resilience, there is inadequate research on this issue. Hollifield (2005 p. 1605) noted“... *that the resilience of refugees is all too often not honoured or included in research ...*” and he highlighted that research methodologies grant more emphasis to the pre- and post-traumatic experiences of refugees and give little weight to the coping mechanisms. This view was supported by Agaibi & Wilson (2005), when they investigated how victims of wars and natural disasters handled their stress. They concluded that due to the lack of a universal definition of resilience, it is difficult to analyse how likely refugees are to exhibit greater resilience than the rest of the population. In some cases, resilience is defined as the absence of psychopathology and the adaptation of coping; other times it is referred to as the superior coping capability of individuals over a period of time (Agaibi & Wilson, 2005).

Meanwhile, a study cited in Pahud (2008), undertaken to explore resilience among Rwandan refugees resettled in Swaziland and France after the 1995 Rwanda genocide showed that Rwandan refugees consider education and improving one’s literacy as essential factors in developing resilience. This finding also draws attention to the importance of education as a way to a better life for refugee communities, especially adolescents. As a result, a number of projects have been undertaken to promote school-based interventions as a way to encourage young refugees to keep their minds active and facilitate the development of both individual and community resilience (Julie, 2008; Hamilton et al. 2005; Ministry of Education, 2006).

In terms of social support, Kovacev and Shute (2004) examined the impact of acculturation and social support on refugee adolescent psychological adjustment. They interviewed 83 young refugees from Yugoslavia now resettled in Australia, and their interaction with their school classmates. The results showed that there was a

direct correlation between peer social support and adjustment ($p < 0.01$) (Kovacev and Shute, 2004). Even though the study showed strong statistical evidence, a number of limitations in their methodology including the small sample size ($N=83$) and low participation rate (not commented on in the article) from the mainstream school potentially introduced bias which compromised the nature of the sample. However, this outcome was consistent with other findings looking at the role of social support in determining the wellbeing of resettled refugees (Kawachi and Berkman, 2001; Simich et al. 2003). Another study exploring the resettlement process of refugees from Africa and Yugoslavia in Perth, Australia, proposed that the ability of refugees to cope and successfully resettle depends on a combination of emotional and institutional support from both local and national services (Colic-Peisker and Tilbury, 2003). Simich et al. (2003) also conducted a qualitative interview with 47 government officials and 38 key informants including immigration officers and refugee service coordinators in Canada. They concluded that refugees resettled in Canada consider instrumental support in areas including health, education, employment and housing as key ingredients for a successful and meaningful life (Simich et al. 2003).

Finally, Pahud (2008) outlined a model that drew together literature on coping processes to propose four major factors which are believed to enhance the coping process among adult refugees (Figure 2, below).

- 1 *Personal achievements:* In which the individual exercises freedom, has an improved sense of belonging, lives in a safe environment, has family connections and has a stable income.
- 2 *Personal resource:* Includes freedom in religious and cultural practise, engagement with society, good communication and language skills as well as a supportive environment for self and family members.

- 3 *Caring persons:* That the individual should be provided with encouragement, treated equally and given the opportunity to excel.
- 4 *Formal support:* Which involves education, housing and financial support

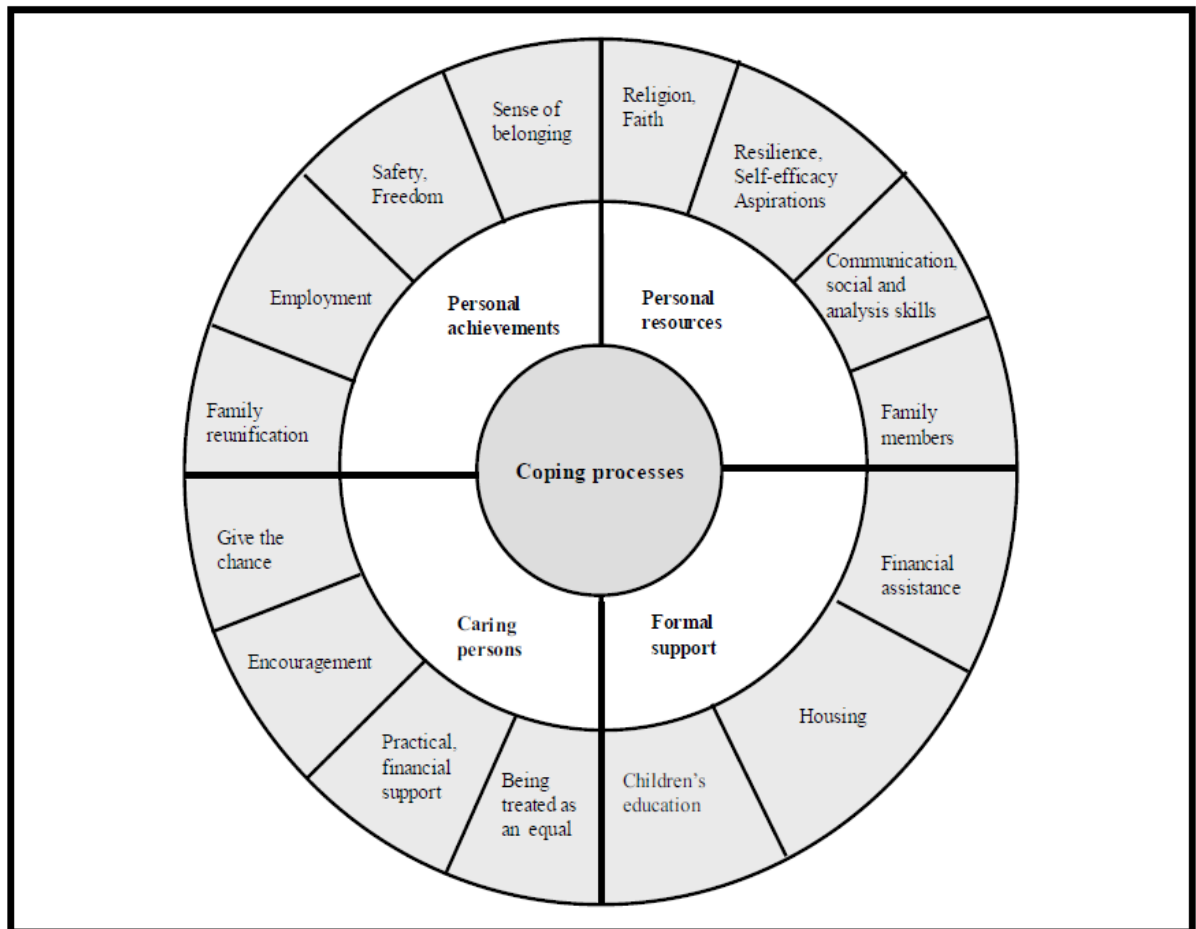


Figure 2: "Factors adult refugees talk about as contributing to their coping processes" (Pahud, 2008, p. 129).

2.4 Individual response to natural disaster (Earthquakes)

2.4.1 Mental health status

Surviving a natural disaster by getting through the physical, environmental, and financial aspects of the disaster is not enough to guarantee the establishment of healthy wellbeing. Even though the impact of natural disasters on communities in terms of mental health may be minimal, the increased vulnerability of some people who experience danger, physical injury, death of relatives and/or friends, and the disruption of their regular life cannot be ignored. The toll of emotional stress varies from one person to another; the feelings of defencelessness almost always result in significant levels of psychological stress (Breslau, 2002). The rise in stress level in those displaced after a disaster can also be explained by the lack of basic needs such as adequate shelter, food, water, sanitation, security and income. The consequence of overcrowding, lack of clean fresh water and food may also see a rise in communicable diseases.

In recent decades, a growing body of international literature has consistently documented the impact that the experience of natural disasters has on existing psychological disorders as well as initiating new stress related disorder. One longitudinal study investigated the effect natural disasters have on stress disorders by examining 78 adults exposed to traumatic events who were not seeking treatment for their stress (Armen et al 2000). Armen and his colleagues concluded that adults exposed to severe traumatic events such as major earthquakes were at risk of developing chronic stress. They also recommended the inclusion of mental health intervention in the early stages of exposure to prevent more stress related disorders in the future (Armen et al 2000). However, a major criticism of this study was the selection procedure. The authors only included subjects who were not looking for

treatment. Therefore, it is possible that selection bias has been introduced to the study. In addition, the drop in the participation rate (from 65% to 58%) during the follow-up period (1.5 - 4.5 years) could have introduced bias to their results. Recall bias was also possible in this study design, with a tendency for some people to remember their experience of traumatic events more than others. A larger sample size and a less biased selection process would have improved the internal validity of the study. Nevertheless, the results of the study suggested that trauma experience can have a prolonged effect for many years.

After the 26 December Boxing Day 2004 earthquake and subsequent tsunami in South Asia, a number of studies highlighted the enduring effects experiencing natural disasters had on psychological wellbeing (La Greca et al., 1998; Lee et al., 2005; Livanou et al., 2004; Sattler et al., 2002; Weemsa et al 2007). A study by Weemsa et al 2007 on the aftermath of Hurricane Katrina suggests that those residents who had been affected by the hurricane were more likely to suffer from a number of psychological symptoms if they had previously experienced significant traumatic events (Weemsa et al 2007). The study also showed a pattern of major positive correlations between experiencing traumatic events and developing post-traumatic stress disorder (PTSD) symptoms (Weems et al 2007). These findings were supported by reports from the USA Centres for Disease Control and Prevention and were consistent with earlier research done on the impact of hurricane disaster events on the psychological wellbeing of individuals (La Greca et al., 1998; Sattler et al., 2002; Weemsa et al 2007). Indeed, the impact of natural disasters on mental health may well prove to be more devastating than the physical effects because of the continued impact of the remembered experience.

2.4.2 PTSD prevalence post natural disaster experience

The ongoing unpredictability coupled with the widespread devastation of earthquakes can result in a wide range of psychological disorders including PTSD. Even though previous research had linked PTSD to major earthquake experience, the prevalence of PTSD in relation to earthquake exposure among communities has only in recent times become a centre of attention for researchers worldwide (Maldonado et al 2002).

A cross sectional study examined the prevalence of PTSD 14 months after two major earthquakes in Turkey in 1999; a magnitude 7.4 earthquake in which there were 17,000 deaths and a magnitude 7.2 earthquake where 832 people died (Bagoglu et al 2004). The authors compared those living near the epicentre with those living in a suburban area located in Istanbul 100km away from the epicentre (Bagoglu et al 2004). The results showed that those living near the epicentre were twice as likely to develop PTSD as those 100km away from the epicentre (22% vs. 11% respectively, adjusted for gender). There were a number of issues in their methodology, which may have affected these results. The authors acknowledged that 23% of participants who lived near the epicentre could not be traced or were not willing to participate. Therefore, they cannot rule out the effect of selection bias which means that the prevalence of PTSD as a result of experiencing the earthquake in the study population may differ from that in the population. As such, the result may underestimate or overestimate the true prevalence of PTSD among residents who lived near the epicentre. The authors evaluated a series of confounding factors mentioned in their article. However, a potential confounder in this study was the geographical difference between the participants. Participants who lived near the epicentre were more likely to suffer from stress and anxiety compared to those who lived in a suburb of Istanbul 100km from the epicentre. It is possible that location (urban vs. suburban) is an independent factor that affected the selection of the sample and also influenced the

outcome result (there may be differences in stress and anxiety levels between urban and suburban dwellers, which are unrelated to the earthquake). Regardless of those limitations, this study had a large sample size (950 participants) and based the judgment of PTSD on structured interviews.

Another study investigated the incidence of PTSD in 157 Greek survivors of the 1999 Parnitha earthquake in a 4 year follow-up study (Livanou et al, 2005). They found that approximately 22% of the survivors experienced distress and 15% had difficulty coping. Their results also suggested that experiencing an earthquake could have serious and long standing psychological consequences (Livanou et al, 2005). Unlike the previous study that investigated survivors of major earthquakes that caused significant destruction and deaths (Bagoglu et al 2004), this study investigated survivors of moderate exposure in the 1999 earthquake in Athens, (magnitude 5.9) where 143 people died and 700 were injured. The nature of this type of study led to a number of limitations that affected its internal validity. The limitations include sample selection and possible existence of recall and measurement biases. Nevertheless, they concluded that there was an association between exposure to a traumatic event such as an earthquake and the development of PTSD (Livanou et al, 2005). This outcome is also consistent with findings from Maldonado et al (2002) who conducted a longitudinal study in Guadalajara, Mexico following an earthquake, to examine the factors associated with acute stress reaction. Their conclusion was that exposure to traumatic events such as an earthquake increases the risk of developing anxiety-spectrum disorder (Maldonado et al 2002).

The long-term psychological effect of experiencing less severe earthquakes or greater magnitude earthquakes with less severity in terms of deaths and injuries is relatively unknown. However, another prospective study evaluated the mental health status of

survivors after the 1989 Newcastle, Australia earthquake of magnitude 5.6, which resulted in 13 deaths (Livanou et al 2005, Carr, 1997). The results showed that 48% of the survivors continued to show high levels of traumatic stress symptoms two years after the earthquake (Carr, 1997). These findings suggest that even an earthquake of a moderate intensity may lead to long-standing problems in some survivors.

Since the September 2010 earthquake in Christchurch, there has been the experience of ongoing stress for many people arising from multiple daily tremors, and random major aftershocks. Primary health care report by Sean Sullivan and Sharlene Wong outlined numerous common themes that provided an insight into the perceptions and the expectations of Christchurch residents (Sullivan & Wong 2011), that included the following:

- 1 Memories of experiencing the February 2011 earthquake devastation resulted in high levels of anxiety.
- 2 After large aftershocks retraumatisation can occur due to prolonged anxiety when family members are unable to be readily contacted and their safety checked.
- 3 Loss of control due to fears of further large aftershocks, isolation as families and neighbours left Christchurch and paranoia in various predictions about major aftershocks in the imminent future.
- 4 Poor living conditions, sleeping patterns, diet and general health were linked to stress and inability to maintain one's health.
- 5 Frustrations with damaged accommodation, limited options for accommodation and feeling pressured to make urgent decisions about their damaged homes and properties increased the distress level.

2.4.3 Prevalence of mental health disorders related to adversity

In daily life, each individual experiences stressful situations including pre-existing illnesses, family problems and/or work pressures which can influence the overall mental wellbeing of any population. Several studies noted the impact of multiple psychosocial stressors (including the experience of traumatic events) on mental wellbeing; however, people's responses to those stressors are different according to their personal characteristics (Breslau 2002). For instance, studies indicate that females are more likely to experience anxiety following earthquakes than males (Armen et al 2000; Punamäki et al 2005). Meanwhile, the exact estimate of a population's mental health status after experiencing traumatic events is very difficult to document due to variation in accepted definitions of mental disorders globally and the methodology used to estimate PTSD (Breslau 2002). However, the current DSM-IV definition of stressor increased the number of diagnostic criteria for various traumatic events including PTSD (Breslau, 2002). For example, using DSM-IV will include a much wider variety of stressors that cause PTSD and thus help create a wider range of possibilities to diagnose and establish more effective interventions. Furthermore, DSM-IV will also give a more accurate estimation of the effect of multiple stressors on the development of PTSD (Breslau 2002).

As a result, researchers have carried out studies in an effort to get a precise estimation of population PTSD prevalence (Tull 2008). Ronald et al, (1995) designed a National Comorbidity Survey to interview 5,877 participants from various communities in the United States to determine the prevalence of PTSD. They estimated that the lifetime prevalence of PTSD among 5,877 participants interviewed was 7.8%. The World Health Organisation (WHO) has also conducted epidemiological surveys on the prevalence of mental health disorders worldwide (Kessler et al, 2005). Their results were similar to Ronald et al, (1995) with the prevalence of PTSD ranging between

0.3% and 6.8% with considerable variation between countries. Recently, the New Zealand Ministry of Health conducted a Mental Health Survey, which aimed to describe the 12-month and lifetime prevalence of major mental disorders among those aged 16 and over living in New Zealand (Oakley Browne et al, 2006). In terms of population experience of PTSD, the survey concluded that the 12-month prevalence of PTSD in New Zealand was 3.0% (95% CI 2.6 – 3.4) and the lifetime prevalence was 6.0% (95% CI 5.4 – 6.6) (Oakley Browne et al, 2006).

These large population-based studies were designed to be similar, to reduce methodological differences, so that the results could be compared and hence, the overall perception is that people are unlikely to experience PTSD in their lifetime.

2.4.4 Refugee mental health status

The experiences of natural disasters such as the September 2010 earthquake and subsequent major aftershocks in February 2011 and June 2011 have had a significant impact on the Christchurch population as a whole, but particularly on refugee communities whose location, circumstances and past history have made them more vulnerable. Even though there was minimal loss of life among the refugee communities after the February earthquake, the overwhelming feeling of the experience and the devastation of the earthquake increased their anxiety levels (Osman et al 2012). Moreover, the effect of past experience of civil wars, isolation from family, life in refugee camps and unemployment on refugee mental health is crucial. A number of international studies have documented a high level of mental health problems in refugee communities (Fazel et al 2005). Nevertheless, obtaining a comprehensive overview regarding the impact of natural disasters (e.g. earthquakes) on the mental wellbeing of refugees has proven to be challenging (Department of Labour 2008). It should be acknowledged that international studies on refugee mental

health may not be applicable to refugee groups in New Zealand, due to their unique experiences here.

An area of concern regarding refugee mental health status is that of identifying the correct definition of mental health. To refugees, the definition of mental health is broad and there is no specific classification of mental health in many of their communities, in contrast to the western perspective. For instance, refugees describe a person with mental health illness as “*person suffered by madness*” for which there is no specific treatment known (Guerin et al 2004). In his study, Guerin et al (2004) noted that Somali refugees have two perceptions of mental health; first, Somalis recognise mental illness when an individual is a danger to themselves or to others. As a result, if a Somali has been described as mentally ill, they will resist treatment. The second perception is the recognition of depression, anxiety and mood change. Guerin and his colleagues also conducted a survey of Somalis living in Hamilton to investigate the difference in perception of depression, anxiety and mood changes between Somalis and western medical practitioners. They found that Somalis associate depression, anxiety and mood changes with social issues and these mental health terminologies are largely unknown to them, compared to western perception. These findings are also consistent with Elmi (1999) that the concepts of depression, anxiety and mood changes are not recognised in ‘*traditional Somali mental health*’. In addition, many Somali and indeed other refugees believe that there is no problem until it becomes obvious and is interfering with one’s life on a daily basis (Guerin et al 2004). However, a major criticism of this study was that it lacked methodological rigor and the evaluation of the self-reported findings was not standardised, hence it is difficult to generalise these findings to other parts of New Zealand. On the other hand, this study highlighted some important factors to consider before applying mental health interventions. Often refugee households overlook mental illness and, therefore,

delay treatment. This is not because of insensitivity or negligence, rather the focus of the refugee family tends to be on immediate family concerns such as obvious physical injuries, diseases and so on.

Most refugees in New Zealand have experienced traumatic events such as; death of relatives and/or friends, war and conflict, shortages of food, lack of basic survival needs, as well as poor health. Nevertheless, few claim those traumatic events are the cause of their problems (Guerin et al 2004). Despite some international studies showing the relationship between experiencing traumatic events and mental illness, the western treatment approach of dealing with mental illness cannot necessarily be applied to refugees. A survey carried out by Guerin et al (2004) showed that some Somali women believe that by talking about their traumatic experience(s) to multiple health workers their feelings will be worsened and they will be made to relive their past experience. Adding to the pre- and post-migration pressure, other factors such as family, unemployment and socio-economic inequalities can also trigger ongoing mental health related issues (Abbott 1997; Te Pou 2008).

Throughout the world, people with lower socioeconomic status have less access to health resources; they are more likely to suffer from ill health, and higher mortality than people living in more privileged social positions (Durie, 2004). Socio-economic disadvantage (SED) is the central issue that relates to health inequality worldwide, including low income, poor housing, high unemployment rates and low education, all of which are believed to have a major influence on ill health and an unhealthy lifestyle (Durie, 2004). As a result, one study revealed that some refugees experience more stress once they have migrated to their adopted country (Guerin et al 2003). The increase in stress levels was due to the increased expectation of being able to provide continuing support for their families back in their homeland despite limited resources

in the new country. This stressor and the existence of other factors such as maintaining their culture and adapting to a new language create uncertainties and anxieties which can drive former refugees into social isolation.

In order to identify the needs of refugees, one should realise that the common western perception that all refugees have poor health and mental status is incorrect. In the past decade, efforts have been made to identify and meet refugees' needs for better health. On arrival to New Zealand, those efforts include the offering of services that include counselling, moral and psychological support, as well as day-to-day assistance with acclimatising to the culture and ways of New Zealand society.

A recent doctoral thesis explored the impact of psychological stress on adult refugee mental health and coping processes (Pahud, 2008). The thesis was based on an in-depth study of the resettlement experience of refugees after arrival in New Zealand, and the findings included:

- 1 One third of refugees interviewed have reported emotional distress prior to and on settlement in New Zealand
- 2 60% of refugees interviewed did not seek professional help regarding their mental health status
- 3 One third of refugees interviewed were willing to accept help and support to deal with their anxiety related to distressing events.

The thesis also highlighted that 20% of all refugees who arrived in the Mangere Refugee Reception Centre had experienced significant trauma or mistreatment, with 14% reporting having experienced past psychological problems (Pahud, 2008). However, it should be emphasised that this study used an in-depth qualitative analysis and so the findings cannot be generalised to the wider refugee population, but the findings may help us to understand the refugees' coping process.

New Zealand Resettlement Services have underlined the lack of existing strategies available to meet refugees' mental health needs (Pahud, 2008). This may be due to various factors including:

- 1 poor knowledge and/or understanding of refugees' history;
- 2 shortage of health professionals who have a similar history;
- 3 lack of trans-cultural training provided for current and future health professionals;
- and
- 4 lack of collaboration between refugee community leaders and health providers.

2.4.5 Health service limitations

Most refugees are not comfortable with sharing their personal experiences with health professionals. This reluctance is due to limited English skills, and limited knowledge or understanding of New Zealand culture and the New Zealand health system. There are a number of barriers that affect the delivery of health care, especially mental health care, to refugees which include:

- 1 Communication between health professionals and refugee patients is one of the prime barriers. Miscommunication due to language barriers or lack of appropriate interpreters may result in cultural misunderstanding (Pahud, 2008).
- 2 The pre-existence of social inequalities between populations in New Zealand is another concern. Inequalities in health and social status between different groups within a population are found worldwide, New Zealand is not an exception to this (Ajwani et al, 2003). Whitehead (1992) defined health inequalities as differences in health and social status or in '*the distribution of health determinants between different population groups that are avoidable*'. One of the daunting challenges facing New Zealand society is how to identify and address the inequality in health

status between communities. For example, refugees who have been forced to leave their homeland and resettle in a new environment have a higher incidence of developing stress disorders when they experience a natural disaster in their adopted country (Guerin et al 2004). Therefore, following a natural disaster, alongside the basic needs for all affected residents, refugees require additional social and economic support.

- 3 Western medical approaches are often direct and show little regard for a cultural holistic approach used by many refugee cultures. For example, during Ramadan a Muslim refugee may become ill and be prescribed medication to take three times per day with food but they only take it early morning and late at night, so the medication is not as effective. The health professional may feel frustrated by the lack of patient compliance with their medication and this may affect the doctor-patient relationship. Furthermore, due to strong family ties within refugee communities, if one individual from a particular refugee community was mistreated or disrespected by a particular health professional, the trust and confidence between members of that refugee community and the health system will be damaged. As a result, the refugee community will be less willing to collaborate with health professionals in general (Guerin et al 2004).
- 4 Limited research has been done on the effect that cultural insensitivity within healthcare practice has on refugees. Ryan, (2007) evaluated the experiences of Somali women living in New Zealand regarding seeking treatment. There were three parts to the study: in-depth interviews with ten women, six focus groups of Somali women and interviews with eighteen mental health professionals (including general practitioners). The study exposed the significance of cultural

traditions both in explanations and treatments of illness. It was also found that the health professionals generally had very limited understanding of these traditions. Recently, Wellington Regional Health and Well-being developed a plan to address this issue and advocated for cross-culture training for those involved in the health sector and for members of refugee communities (Refugee Health and Well-being Action Plan, 2006).

- 5 Costs related to healthcare, and having appropriate funds in place to help enhance refugee services proved to be an issue. A successful programme utilizes the existing services and cultural institutions already in place, which helps reduce the cost of the programme.

Guerin et al (2003) conducted a study which aimed to present a general idea of self-reported health status and obstructions to health service utilisation. The study involved conducting in-depth interviews with 54 Somali participants by a using an interpreter researcher (Guerin et al., 2003). The results generally showed that Somalis relied on general practitioners for most of their health problems. It also showed that most Somali refugees had many problems accessing the services required, the biggest problem being language. One proposal to overcome this issue was to encourage the local service to provide interpreter training to local refugee members. By doing so, health consultation and referral will be easier and minimise misunderstanding. However, the issue of gender difference should be taken into account (i.e. refugee females are more comfortable with a female interpreter than a male interpreter).

2.4.6 Prevalence of mental health disorders among refugees

There is a great deal of research exploring the psychological outcomes of war that especially highlights the vulnerability of former refugees to mental disorders (Fazel et

al 2005; Guerin et al 2004). The methods used to estimate the prevalence of mental disorders after exposure to traumatic events vary according to the criteria used to assess mental disorders. Anxiety and depression disorders have been considered by some researchers to be common in refugees (Guerin et al 2004). On the other hand, Briggs and Macleod (2006) investigated the effect of demoralisation on refugees' mental health. Their study showed that demoralisation could be a preferable diagnostic criterion for mental health diagnosis rather than traditional symptoms such as depression or low mood (Briggs & Macleod, 2006).

Meanwhile, various studies emphasise that refugees are at risk of developing a severe form of anxiety disorder (PTSD) (Fazel et al 2005 ; Van Ommeren et al 2002). According to DSM-IV, the current definition of PTSD consists of two parts; the variety of stressors exposed (Criterion A₁) and the individual response to those stressors (Criterion A₂) (Breslau 2002). If those criteria are met, assessment for symptoms such as re-traumatisation or flashbacks, avoidance of thoughts that symbolise the trauma and symptoms of unnecessary provocation will be undertaken. The diagnostic criteria require the existence of symptoms for at least one month and the display of more than one symptom.

Understanding refugee mental health status and the impact psychological disorders have had on their new resettled life is harder to estimate. One explanation for this is the researchers' interpretation (Graig et al 2006). For example, Hollifield et al (2002) carried out a critical review to assess the characteristics of 394 publications evaluating the impact of experiencing traumatic events on refugee health. They concluded that the majority of articles they reviewed displayed high levels of publication bias and some studies suffered from numerous methodological flaws. Furthermore, they drew attention to the lack of base-line refugee focused research.

Nevertheless, in the past decades there has been a considerable body of literature that covers not only the link between PTSD and victims of disaster, but its impact on the survivors as well. Silove et al (2002) conducted a population based study to understand the long term effects of experiencing multiple traumas on the mental health of 1413 Vietnamese refugees resettled in Australia. They found that compared to the general population, the odds ratio for Vietnamese refugees experiencing long term psychological trauma is 4.7 ($p < 0.0001$, 95% CI 2.3-9.5). Another study reported that the prevalence of PTSD among Bosnian refugees who migrated to Australia ranges between 18%-53% (Kovacev and Shute, 2004).

Although several studies have reported a high prevalence of PTSD in refugee groups, other studies have shown a different outcome. Despite the fact that PTSD is a pathological psychological condition which is perhaps related to a life threatening experience, Elmi (1999) proposed that a low prevalence of mental illness among refugees was documented consistently (see section 3.1 of this chapter). In fact the majority of refugee groups recorded PTSD differently due to their cultural diversity which may explain the low prevalence (Bracken & Petty, 2001). As a result, further research on immigrants with traumatic histories is crucial as a basis for effective treatments.

2.5 Societal response to natural disaster

A disaster is any event that overwhelms the local and national response capability. It is classified as a result of either natural (e.g flood, tsunami, fire, earthquake) or manmade hazards (e.g wars, genocide) and culminates in events leading to significant physical and emotional damage (Combs et al, 1999). Some cases of specific disasters can lead to a chain of events resulting in further devastation; a classic example is an earthquake that causes a tsunami which leads to flooding. The unpredictability of natural disasters and the inevitable high risk to life as well as damage to infrastructure

means urgent solutions are required to minimise the damage. As a result, it is vital to establish comprehensive strategic plans that cover all essential policies, processes and procedures required to manage the disaster impact. In 1999 the United Nations International Strategy for Disaster Reduction (UNISDR) established an international decade for natural disaster recovery resolution (44/236) to focus on all issues related to natural disaster reduction (Resolution Adopted by The General Assembly, 2000).

Methods to reduce the risks associated with disasters include:

- 1 careful evaluation of both the infrastructure and potential for social reconstruction,
- 2 public awareness to help people understand what to do when disaster occurs, and,
- 3 the establishment of high-quality risk management systems for *early warning* which are vital to provide all people involved with the recovery plan and the public with meaningful information (ISDR United Nations Joint Press Kit for Bali Climate Change Conference 3-14 December 2007).

In this section, a brief review of international, national and local community-based recovery initiatives is presented including a description of some disaster management systems used during natural disasters, with international and national models as examples.

2.5.1 Response systems

The following section will provide an overview of multiple recovery systems used by United States, Japan, Australia and New Zealand to manage disaster(s).

2.5.2 National Incident Management System

The National Incident Management System or NIMS is an incident response management strategy developed by the United States of America Department of

Homeland Security in 2004 to provide an effective nationwide framework within which all government and private agencies work together to establish and manage disaster recovery (Anelli 2006). NIMS incorporates an existing system into a nationwide strategy to increase awareness of the disasters and provide a more comprehensive response.

This system consists of six components:

1 *The establishment of a command system.*

The NIMS regular incident management command structures are built on three main administrative systems; 1) Incident Command System (ICS) which explain the operational characteristics, improve collaboration and communication during management and emergency response (Anelli 2006) (See later); 2) Multi-agency coordination systems much like ICS but which operate at the regional, district, and national levels; 3) Public information systems which refer to the establishment of communication systems between the emergency response team and general public which include up-to-date accurate information to the public throughout the crisis.

2 *Preparedness*

Effective incident management begins with well-executed preparedness activities on a regular basis. In general, preparedness includes a combination of preparation, training, exercises, and well-qualified management response, adequate supply of equipment and sufficient public awareness of the situation and guidance of appropriate preparedness strategies, using media as an example. According to Anelli (2006), training and realistic exercises are vital components in developing preparedness. An advantage of using NIMS for preparedness is that this system emphasises the qualifications and the standards of the trainee, providing for ongoing training and enhances overall preparedness (Anelli 2006).

3 Resource management

Using NIMS, the resources used are maintained and tracked using technologies such as computers to improve the longevity of the resources available.

4 Communication management

The standard of communication management is an essential component in NIMS. Such standards ease the complexity of the emergency and deliver much needed collaboration between all parties involved including the public.

5 Support technology

Effective equipment and technological expertise facilitate the ongoing procedures and usefulness of the emergency response.

6 Evaluation

Evaluation is crucial to determine how and if the recovery strategies met the needs of the communities, and helps aid the government and stakeholders to decide if the plans will continue in future. Therefore, process evaluation is conducted throughout the implementation phase to improve and adjust the strategies used. In addition, suitable personnel to plan and implement the strategic plans are essential. For instance, coordinating managers for the recovery plans with appropriate skills are essential to monitor the progress of the plan and comment on which strategies are best to apply and which ones will be eliminated. Thus, constant monitoring of the staff involved in carrying out needs assessment is vital to achieve the desired outcome. Finally, evaluating whether the strategies met the objective or sub-objective is fundamental to assess the plans reach, satisfaction, readability of materials and to review the feedbacks regarding the proposed plan.

However, in order to ensure the success of NIMS, the following criteria must be met:

- 1 Agreement between all agencies to maintain the incident management partnerships and the effectiveness of recovery strategies.
- 2 Delivering appropriate resources and support to the local affected region.
- 3 Collaborating with local emergency management to establish an effective leadership during crisis.
- 4 Adjusting current emergency response plans to meet the needs of emergency management teams as well as the affected people.
- 5 Utilising the existing resources to facilitate the actions needed from departmental and agency-specific authorities.
- 6 Developing emergency headquarters for the affected region to encourage the local ability to ensure continuous operational readiness in future emergency incidents.

2.5.3 Incident Command System

The Incident Command System or ICS is a standardised emergency management tool established by the California State Department in the 1970s to meet the demand for small or large emergency or non-emergency responses (Anelli 2006). It is used to plan for a variety of disaster events, which include natural disasters. The design of this system enables effective management by integrating required resources, personal involvement, procedure planning and execution, collaboration and communication between agencies involved in the system and the public. The ICS can be viewed from top-down providing a chain of command from the incident commander at the top who is in charge of authorising all the necessary actions needed by the incident plan (Figure 3).

- **Command**
Develops incident objectives and approves resource orders
- **Operations**
Identifies, assigns, and supervises the resources needed to accomplish the incident objectives
- **Planning**
Tracks resources
- **Logistics**
Orders resources
- **Finance/Administration**
Procures and pays for resources

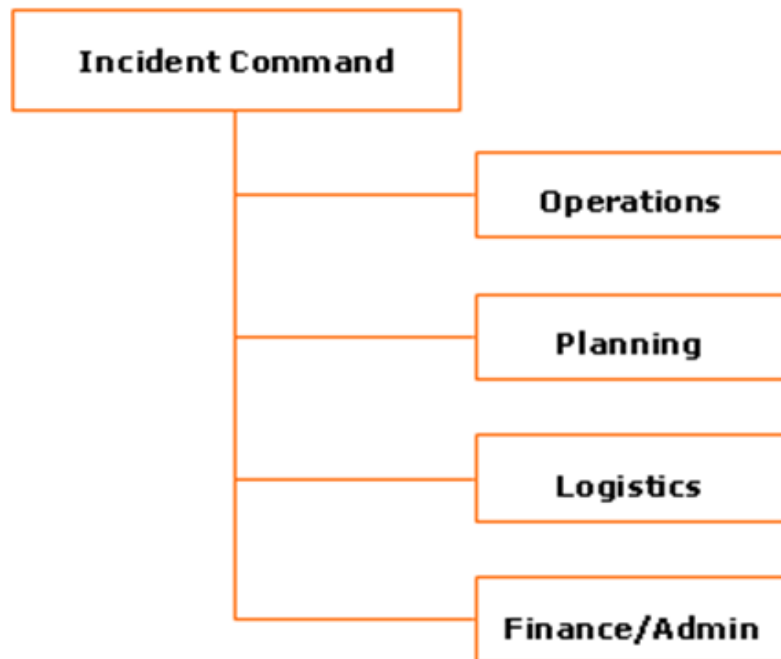


Figure3: Incident Command System (ASPCA, 2012).

Over the course of time the ICS plan is evaluated in different stages of implementation to maximise the productivity of the strategy as it progresses. The feedback from this evaluation will direct the application course of the recovery strategy. Having an emergency operation centre is very important during disaster events and it has been proven to be the driving force in the success of the ICS plan and to improve management skills during disaster events. ICS also helps keep order and communication between agencies involved and the chain of command. It also establishes a framework to manage future disasters quickly and efficiently.

2.5.4 Standardised Emergency Management System

The Standardised Emergency Management System or SEMS is an organisational instrument used on a local or national level to ensure coordination of disaster management (<http://www.vetmed.ucdavis.edu>). This emergency system was established by the California State after the 1991 East Bay Hills Fire in Oakland

primarily to improve the communication and response system in place and to reduce the impact of disaster on the local population and infrastructure (<http://www.vetmed.ucdavis.edu>). The basic framework of SEMS incorporates and replaced the use of ICS and it is designed to be flexible and adaptable to the various emergencies as well as meet the emergency management needs (<http://www.vetmed.ucdavis.edu>). The main foundation of SEMS consists of 5 levels of organisation:

- 1 Field level:- involves the distribution of resources available and personal tasks in order to carry out a direct strategic decision that impacts the disaster response
- 2 Local level:- manages and controls the local emergency response to the disaster.
- 3 Operational level:- within geographic boundaries allows concentration of resources needed for emergency management within the affected locale or district. This level is essential to ensure constant communication between local, regional, national organisations and the media.
- 4 Regional level:- information and resources within the operational area are coordinated in this level, the combination of operational and regional level supporting the needs of the affected region and delivering the emergency response quickly.
- 5 National level:- key relevant regional and national agencies are brought together in this level to enhance collaboration and improve resource allocation. Also at the national level the decisions that impact the emergency response to the affected region are made quickly and ensure full support. These include managing local response tools as well as monitoring the progress of the recovery strategy.

As the disaster moves from the response to recovery stage, SEMS is important to maintain the integrity and effectiveness of the recovery strategy as well as improve

communication and public awareness of the crisis in hand (Figure 4;
<http://www.vetmed.ucdavis.edu>).

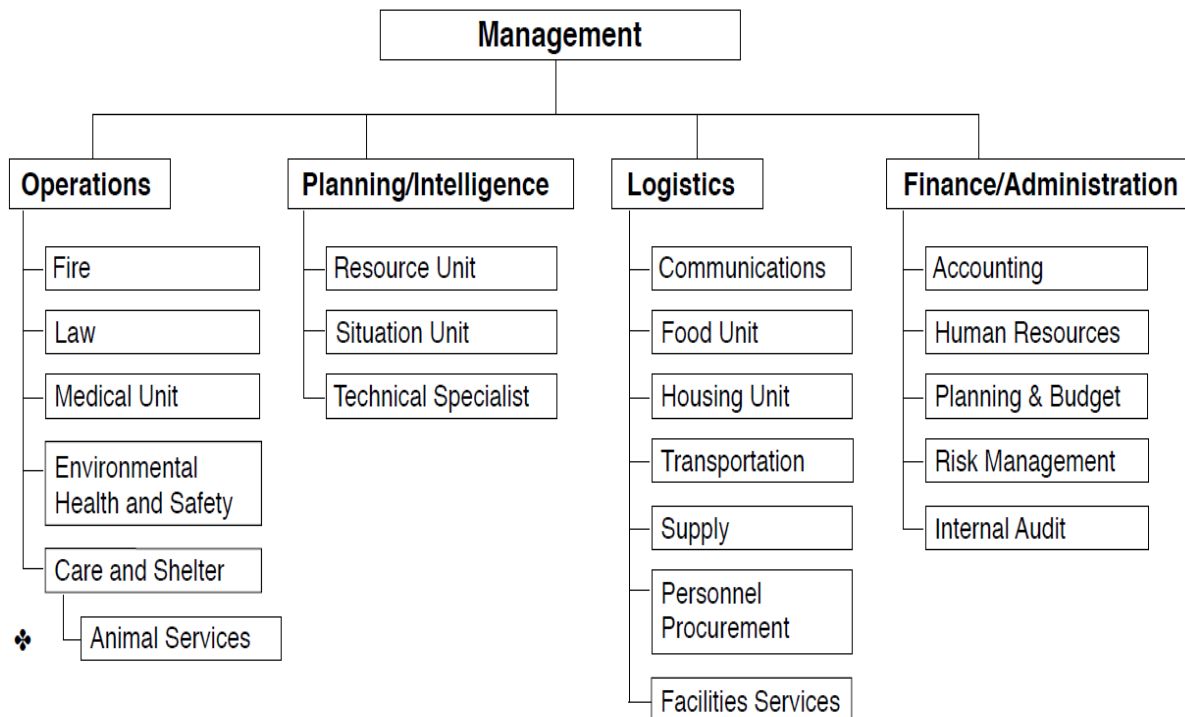


Figure 4: Standardised Emergency Management System Framework

2.5.5 International community recovery initiatives

There has been limited research done to review an effective community-based recovery initiative because of the differences in disaster experience and the characteristics of those experiencing the disaster (Masten and Obradovic, 2008 cited in CDHB, 2010). While there is no clear cut generic response model advocated, there are localised responses which have been reviewed and assessed for broader application.

For instance, in 2007 the city of Kingston -upon- Hull (commonly known as Hull) experienced floods that affected over 8,000 households (Whittle et al, 2010). Subsequently, a descriptive study carried out by Whittle et al (2010) found that the issue was not the floods per se but the devastation post floods that people found most challenging to deal with. After undertaking a questionnaire based study on the impact of the floods, the results showed that rescuers, media, and supportive neighbours were significant during the recovery process. Meanwhile, they highlighted that barriers to effective recovery included lack of clarity regarding the recovery process information update, minimal national agency support and housing and emergency shelter problems. As a result they proposed that better collaboration between local and national agencies is beneficial for faster and more efficient recovery processes (Whittle et al, 2010).

Hurricane Andrew, a category 5 hurricane, affected several cities in Southern Florida in late 1992. The impact of this hurricane was severe, causing widespread devastation and over 175,000 people left their residences and over 120,000 jobs were affected (Ironson et al, 1997). The United States federal government provided substantial funds to key recovery strategies including planning, housing and boosting the local economy. Furthermore, local community leaders established a non-governmental organisation called “*We Will Rebuild*” to increase local involvement in recovery

development (United States Government Accountability Office, 2009). Some of the projects initiated were community interaction programmes, restoring agriculture and local businesses as well as helping boost local tourism and education.

The largest earthquake ever recorded in Haiti in 2010 was reported to have caused an estimated \$14 billion in damage as well as more the 200,000 death and over 1 million displaced residences (Margesson & Taft-Morales, 2010). It has been noted that there were significant issues surrounding the timeframe of recovery implementation. Those concerns including recovery strategies implementation as well as both social and infrastructure recovery planning, which increased the frustration of the local community and made them question the effectiveness of their city recovery plan (Margesson & Taft-Morales, 2010). Another disaster event that caused extensive damage occurred in 1995 in the city of Kobe, Japan. The 7.3 magnitude earthquake triggered massive damage to the city's infrastructure resulting in impairment to approximately 400,000 houses, the death of over 6,000 and the injury of 40,000 people (Heath, 1995). As with Hurricane Andrew, the Japanese government delivered significant funds to facilitate the Kobe earthquake recovery process. In general, the government was in charge of the recovery process (a top-down approach) (United States Government Accountability Office, 2009). Using this method, the Japanese government ensured the effective utilisation of the resources, prioritised the infrastructure recovery, restored local economy and was able to rebuild the community affected. Of significance, some of the central infrastructure of the city was rebuilt quickly (Figure 5 United States Government Accountability Office, 2009).



January 1995



August 1995



January 1995



September 1996

Above left and above right: Damaged railways were restored by August 1995, seven months after the earthquake.

Far left and near left: The Japanese government restored collapsed highways, including the Hanshin Expressway. The project was complete 20 months after the earthquake.

Figure 5: City rebuilt 20 months post Kobe earthquake.

Following an initial focus on physical infrastructure, the government shifted their attention to social and economic reconstruction (United States Government Accountability Office, 2009). Therefore, the Japanese government recognised the importance of restoring the city's physical infrastructure before rebuilding the community in order to restore a sense of normality for the residents and ease the social recovery. Finally, the important lesson learned from this scenario was the direct correlation between effective response to disaster using a top-down approach and the speed of executing a successful recovery plan.

2.6 National response frameworks

2.6.1 Coordinated Incident Management System

The Australian government uses an Incident Command System called Australasian Inter-Service Incident Management System (AIIMS) (Iannella and Henricksen, 2007). In New Zealand, a similar command scheme called Coordinated Incident Management System (CIMS) is used. CIMS is a basic framework that was primarily designed for all levels of emergency management and can be used in various emergency incidents as well as determining the scope of the incident response (New Zealand Fire Service, 1998). Like ICS, CIMS is based on seven key principles (New Zealand Fire Service, 1998): I) Establishing common incident action plans rather than having multiple agencies develop their own strategies; II) Creating common terminologies that can be understood and used to describe the rules, tasks and implementation process; III) Identifying realistic and achievable tasks that can be managed; IV) Establishing flexible organisational structures that can be modified to meet the nature of any given incidents; V) Using widespread resource management to maintain and track the resources during incidents management; VI) Establishing collaborative communications between all parties involved by using a common standard operation system; VII) Setting up a specific operational site known to all

responding agencies. For example, following the February 2011 earthquake in Christchurch, the regional emergency operation centre (EOC) was located in the Christchurch Art Gallery. Other organisations (such as the Canterbury District Health Board public health unit), established their own EOCs, which were linked to the regional EOC. A National Crisis Management Centre EOC was established at the Beehive (central government building) bunker in Wellington.

2.6.2 Disaster Recovery in Canterbury

Following the immediate response to a disaster is the recovery phase. The Ministry of Civil Defence and Emergency Management defined recovery as “ *the coordinated effort and processes to effect the immediate, medium, and long term holistic regeneration of a community following a disaster*” (Ministry of Civil Defence and Emergency Management, 2005a: 5 cited in Canterbury District Health Board, 2010, p.04). Based on this definition, the CDHB proposed a community initiative recovery framework that focuses on four key concepts; social environment, natural environment, economic environment and built environment (Figure 6; Civil Defence and Emergency Management, 2006).

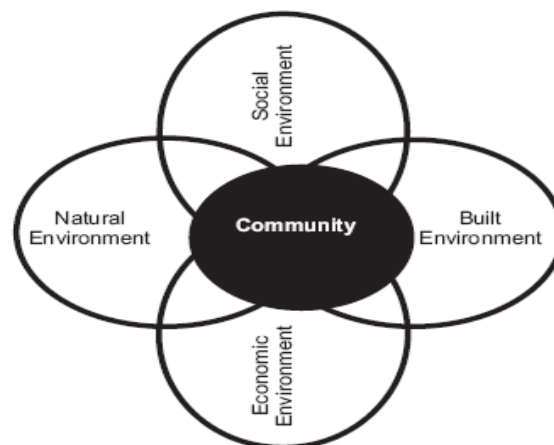


Figure 6: Community recovery principles

They also noted that five essential principles are needed in order to create a successful community recovery initiative strategy (Canterbury District Health Board, 2010):

- 1 The importance of promoting connectedness,
- 2 Encourage hope,
- 3 Advocate for community safety,
- 4 Promote self and joint usefulness ,
- 5 Endorse community calmness.

2.6.3 Canterbury Earthquake Recovery Authority

The Canterbury Earthquake Recovery Authority (CERA) is the agency established by the New Zealand government to organise and facilitate the rebuilding of Christchurch and the immediate areas subsequent to the 22 February 2011 earthquake (CERA, 2011). In late March 2011, CERA was requested by the New Zealand Government to draft and implement a long term strategy for recovery from the 2010/2011 Canterbury earthquakes (CERA, 2011). This strategy is intended to provide the solid groundwork to manufacture a recovery plan, which aims to provide clear guidance and up-to-date information regarding the recovery process to private agencies and the public, support economic growth, advocate for healthy communities, ensure and re-establish public confidence and maximise the rebuild of greater Christchurch (CERA, 2011). Consequently, the draft recovery strategy from CERA will cover the same key principles as the Civil Defence and Emergency Management recovery framework. Figure 7a below illustrates how the recovery strategy is intended to work. The central aim of the strategy is located at the centre of the diagram, with the four key components of the strategy (economic, building, natural and social) surrounding the main aim. The social recovery timeframe for the strategy was drafted as well, which prioritises and demonstrates the key steps required in order to achieve social recovery (Figure 7b).

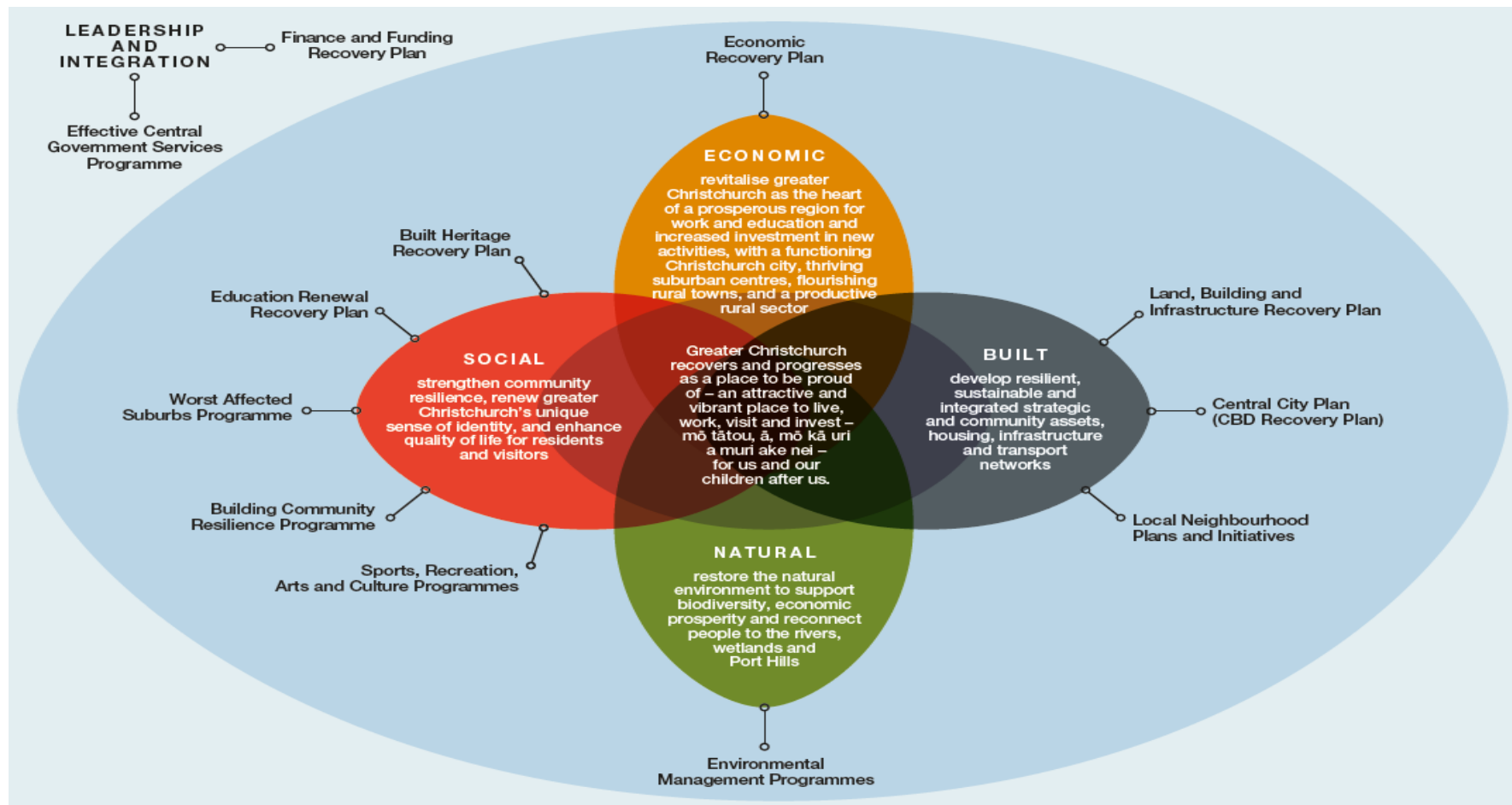


Figure 7a: CERA draft recovery strategy framework

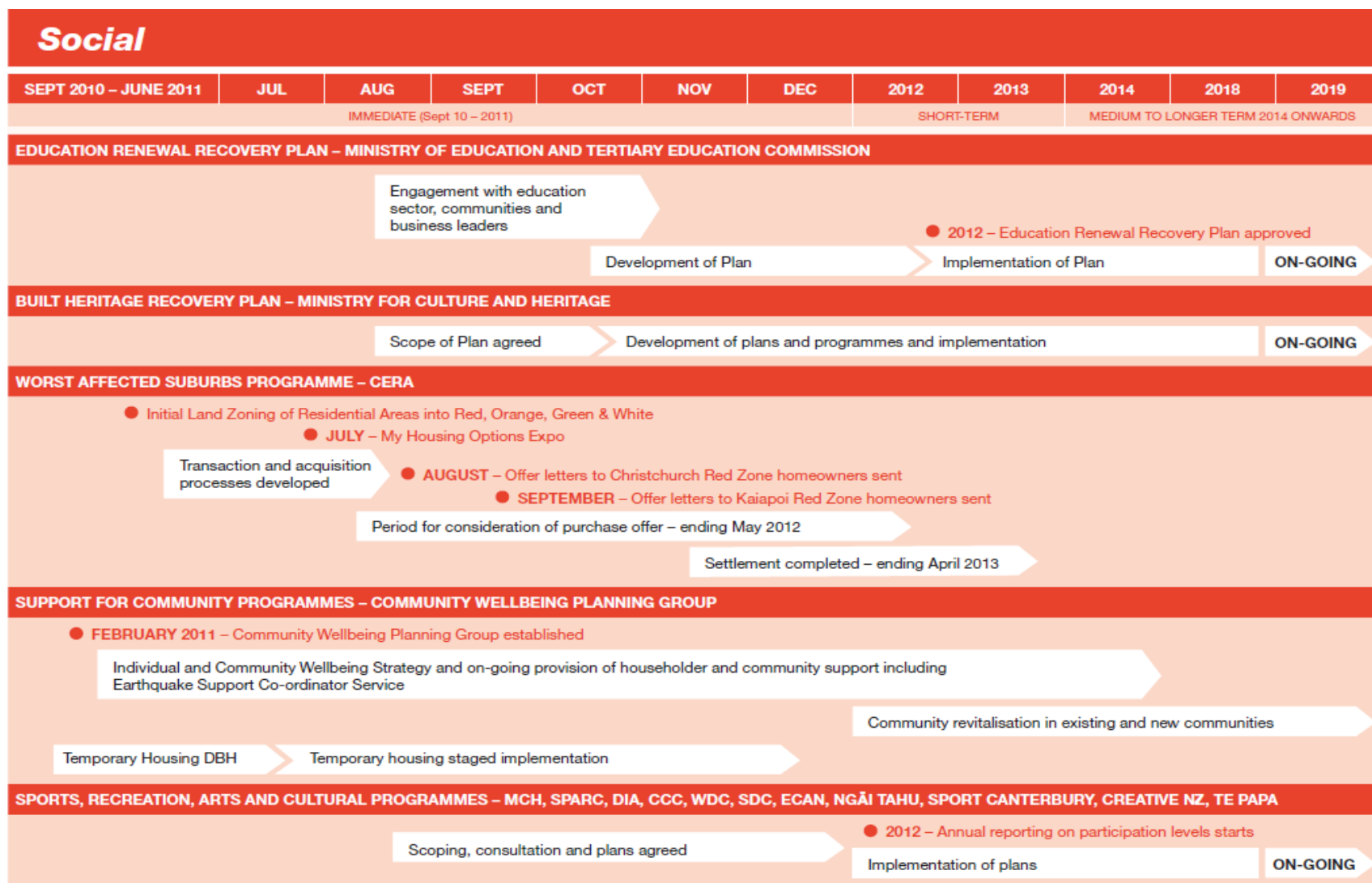


Figure 7b: Key timelines for the CERA draft recovery strategy framework

2.7 Summary

The 4 September 2010 and 22 February 2011 Christchurch earthquakes and subsequent aftershocks have had a significant impact on the Christchurch population as a whole, which resulted in ongoing stress for many people arising from multiple daily tremors, and random major aftershocks. The initial sections of this literature review have highlighted important research on issues related to the impact of disaster experience on mental wellbeing relative to the general population and refugees. Results of these studies include information on factors contributing to how an individual copes. A person's capability to cope and to exercise coping strategies is dependent on a combination of external factors and individual characteristics. For example, supportive environments which include social support and cultural practice including religion and faith as well as individual resilience are proven to be important resources for coping (Rowe and Allen, 2004; Tugade et al 2004). Multiple studies have proposed models for coping and increasing resilience, however, it should be emphasised that not everyone is psychologically affected by natural disasters and experiences PTSD since every individual has differing abilities to cope and respond to adversity under the circumstances they face (Ronald et al, 1995; Zimmerman & Arunkumar, 1994). Even though refugees are likely to be at higher risk of mental disorders, the exact figures are yet to be determined accurately due to methodological and practical challenges (Fazel et al 2005). For example, it is difficult to determine the background of refugees' mental health status before their trauma experience, therefore making it difficult to determine the extent to which their mental health is a result of their traumatic experiences. Furthermore, the use of different definitions of psychological concepts in understanding the impact of war and displacement will result in different interpretations of the same findings (Breslau 2002).

Knowing the psychological effect of natural disasters, the next section briefly evaluated national and international recovery strategies in place. Examples of international recovery strategies include the National Incident Management System, Incident Command System, Standardised Emergency Management System and Australasian Inter-Service Incident Management System. In New Zealand, Coordinated Incident Management System or (CIMS) is used as a framework for emergency management.

After the event of the 22 February earthquake, the New Zealand government assigned the Canterbury Earthquake Recovery Authority (CERA) to establish a recovery plan that aimed to provide clear guidance and up-to-date information regarding the recovery process and maximise the rebuild of greater Christchurch.

The draft recovery strategy faces challenges and, in some cases, may generate more questions than answers. Thus, the next chapter outlines the methodological steps used in the current study to investigate CERA's draft recovery strategy from the perspective of the refugee communities in Christchurch.

CHAPTER THREE: Research Methodology

3.1 Introduction

The purpose of this study was to investigate the impact of the CERA draft recovery strategy on refugee communities in Christchurch, as well as highlighting current progress in terms of collaboration, implementation, and strengths and possible limitations of the draft recovery strategy. In an effort to recognise the points of view of the participants regarding the CERA draft recovery strategy, key informants, who directly engage with refugee communities, were interviewed. Attaining an understanding of key informants' points of view helped to improve the researcher's knowledge regarding the operational level and the impact of the CERA draft recovery strategy on the refugee communities in a comprehensive manner. As such, this study complements a summer studentship project that investigated how refugee communities coped after the traumatic events of the 4th of September earthquake and aftershocks in Christchurch (a paper published in the New Zealand Medical Journal, which reports the findings of this project is provided as Appendix 1).

3.2 Qualitative versus Quantitative

Social sciences research can be carried out using either or both quantitative and qualitative methods that together will present a comprehensive and balanced analysis of particular research (Bryman, 2001; Giddings & Grant, 2006; Hopkins, 2000; Sale et al., 2002; Trochim, 2006). Despite the fact that both quantitative and qualitative methods can be used in social sciences research, there are nevertheless recognised differences, advantages and disadvantages of the two research approaches (Alderson, 2001).

The quantitative approach is based on the use of numerical data from a sample of the population of interest often to recommend a final course of action (Giddings & Grant, 2006; Sale et al., 2002). Therefore, quantitative methods use systematic practical investigation of social phenomena through statistical analyses and are thought to be objective because they use statistical data to confirm or contradict particular hypotheses that may impact on or explain the phenomena. The quality of quantitative research is judged on the validity and reliability of the results (Golafshani, 2003; Hopkins, 2000). Validity determines how accurate the variable measures are and how trustworthy the results are (Golafshani, 2003). Joppe, (2000) cited in Golafshani, (2003) defines reliability as “*the extent to which results are consistent over time and an accurate representation of the total population under study*” (p.598) and whether the research can be replicated using a similar methodology. As such, a quantitative approach allows the researcher to measure and analyse independent and dependant variables in detail to accept or refute a given hypothesis.

Quantitative research may also give a generalisable outcome that can be applied to the wider population. However, to establish a precise estimate of the particular association between variables, the sample size should be large enough and a random sample of subjects should be taken in order that the findings can be generalised to a wider population of which the sample is considered representative (Hopkins, 2000; Sale et al., 2002). Since quantitative research focuses on numerical analysis rather than an in-depth understanding of the nature of data, it may offer less information regarding behaviour (Bryman, 2001 ; Hopkins, 2000; Trochim, 2006). Another limitation is the need for a large population sample in quantitative analysis in order to obtain accurate and statistically significant findings.

In contrast, the qualitative paradigm is based on behaviour analysis and aims to gain an understanding of social phenomena (Bryman, 2001; Golafshani, 2003; Hopkins, 2000; Sale et al., 2002). Qualitative research is defined as "*any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification..... instead, the kind of research that produces findings arrived at from real-world settings where the "phenomena of interest unfold naturally "*" (Golafshani, 2003, p.600) The value of qualitative research is judged on the trustworthiness (i.e. the findings of particular study is worth paying attention to) and interpretations of the results (Denzin & Lincoln, 2005). Consequently, a good qualitative study can assist us to understand specific situations that would otherwise be mysterious or confusing as well as help us to establish important relationships (Golafshani, 2003; Hancock, 1998). Thus, qualitative methods are said to be subjective because the researcher uses behaviour analysis which may then generate hypotheses for quantitative research. As such, both research methods require careful analysis and interpretation as well as the application of high ethical standards to fulfil the expectation of their design. This is necessary to accurately represent the intended population sample, bearing in mind that qualitative methods do not attempt to provide representative data. Additionally, qualitative studies usually investigate smaller target populations compared to quantitative studies. For that reason, qualitative research provides a unique focus on the research question with in-depth understanding of a specific group within a target population (Hopkins, 2000). Since qualitative research studies fewer people, this often reduces the overall generalisability of the results and makes it difficult to compare different populations. Furthermore, the researchers are heavily involved in the process of qualitative analysis, which therefore could give the researchers a biased view of the study and participants (Hopkins, 2000; Trochim, 2006). As a result, the researchers

could interpret their findings according to their point of view, which may damage the credibility of their findings. .

Some researchers employ a mixture of qualitative and quantitative approaches whereby the researcher uses one method for one phase and the other for a different phase. However, this combined approach is the subject of intense debate because it raises a variety of issues that affect the methodological design (Sale et al., 2002; Trochim, 2006). For instance, quantitative researchers rely on statistical data based on the assumption of either a random or representative sample, whereas qualitative analysis relies on nominal data rather than numerical (i.e. the qualitative data cannot be measured numerically, rather it is categorised and coded with numbers or letters, for example gender or marital status) (Bazeley, 2002). Therefore, the descriptive nature of the qualitative approach and the analytical nature of the quantitative approach may treat the data differently and subsequently, create problems in analysis. Other crucial limitations of mixed methods research include issues surrounding generalisation of the findings given the choice of the methods used and sample selected and possible errors in results due to different interpretations of the data (Bazeley, 2002).

Despite those arguments, many researchers strongly support mixing both qualitative and quantitative approaches since it allows triangulation of data and thus enhances the overall rigour of the study. For instance, a mixed methods approach can utilise qualitative and quantitative methods in tandem. Thus, a survey may be carried out initially, and the findings analysed quantitatively to help determine the topics for key informant interviews. Alternatively, focus groups could be used to identify questions for a quantitative survey. Other advantages to mixing both qualitative and quantitative approaches include, more effective methodological validity and utilisation of different data sets. Mixed methods research also allows the collection of

complex information which cannot be accommodated entirely with a single approach (Giddings & Grant, 2006; Mactavish , 2000). Nevertheless, combining methods also has its limitations including the extra time it takes, wide-ranging data collection and expensive resources, as well as the need for researchers to have expertise in both methods.

3.3 Methodological Approach

For the purposes of this research, it was felt that a qualitative approach would be most suited to explore the perspectives of key informants on the CERA draft recovery strategy, giving a more in-depth understanding to complement the earlier survey. As is evident from the brief literature review above, qualitative approaches can assist in understanding specific situations by describing and/or interpreting the findings, unlike the quantitative approach that investigates social phenomena through statistical analyses and may be used to test hypotheses. A variety of qualitative traditions and theories exist, each containing diverse techniques; some of those theories include ethnography, case study and grounded theory. However, it was determined that the best descriptive method suited for this study is thematic analysis.

Thematic analysis is a conventional practice in qualitative research which focuses on themes and patterns of behaviour (Anderson, 2007). It is a widely used method, although at the same time there is some disagreement regarding the validity and the application of thematic analysis (Attride-Stirling, 2001; Braun & Clarke, 2006; Tuckett, 2005). For some researchers, thematic analyses can be viewed as a “*very poorly branded method*” that does not carry the same weight as other qualitative analysis such as narrative analysis and grounded theory (Braun & Clarke, 2006, p.6). Others claim that thematic analysis is considered the primary qualitative mode of analysis that researchers should pay attention to because it outlines the foundation and

the skills required to carry out various types of qualitative analysis (Braun & Clarke, 2006). As such, some researchers treat thematic analysis as a tool rather than a specific qualitative method to analyse existing data.

An essential part of thematic analysis is discovering themes and concepts embedded during data collection. By definition, a theme is a collection of linked ideas or categories that display a common outcome during the analytic process (Creswell & Miller, 2000,). Thematic analysis and other qualitative methods such as grounded theory are approaches in which the identification of themes are managed differently. Both methods identify important topics and present a view of certainty through systematic processes which later draw a bigger and more complete theme. This process is called “*de-contextualisation and re- contextualisation*” (Willig, 1999). However, unlike grounded theory, thematic analysis is not “*conceptually demanding*” and does not require the same level of theoretical and technological knowledge as grounded theory and it only focuses on the common themes gathered (Braun & Clarke, 2006). Moreover, the process of thematic analysis ensures every attempt is made to utilise common themes from the genuine words of participants, and to collect them in a manner that directly reflects the theme’s objectives as a whole. In addition, since thematic analysis is not dependent on other frameworks, it is a flexible approach which allows the researchers to determine on their study themes in a number of ways. An essential issue identified in a thematic analytical framework is that the particular approach taken is regular within the analysis and the theoretical level of a thematic analysis remains understandable (Braun & Clarke, 2006). Thus, there are two main levels at which themes are identified in thematic analysis - the semantic and latent levels (Boyatzis, 1998). In general, thematic analysis centres mainly on one of these levels (Braun & Clarke, 2006)., The themes in the semantic approach are recognised

superficially and the researcher does not assume anything beyond what participants reported. In an ideal situation, the semantic process begins with a description of the data obtained to identify common patterns and then the patterns are summarised for interpretation. The interpretation phase attempts to hypothesise the importance of the patterns that emerged from the data as well as their broader meanings. In contrast, the latent approach goes beyond the semantic level to examine the underlying ideas, assumptions and ideologies that explain the semantic content of the data (Braun & Clarke, 2006). Therefore, the themes analysed under latent thematic analysis are already theorised and require in-depth interpretation rather than just description. Given the differences between semantic and latent approaches, the data collected for this current thesis is the latent approach because the researcher felt that the themes detected from the analysis required further examination, not just simple observation. This included further investigation of the main themes detected to possibly extract further sub-themes that could explain the findings. Therefore, in-depth analysis would help us to gain a better understanding of the participants' responses and improve the trustworthiness of the findings.

Despite the fact that identifying themes involves some level of interpretation, the researcher's own points of view regarding the themes should be stated clearly and the researcher should avoid casting his/her opinions on the analysis phase (Anderson, 2007). Thus, some researchers will not reveal their opinions or involvement while others will endorse the involvement of the researcher and their expertise as part of the research process, contributing to the development and analysis of the data/themes.

Finally, thematic analysis involves a series of steps to ensure the researcher identifies the intended themes during data collection. The first step is to arrange the data by either direct quotes or paraphrasing to identify a common theme picked up from

participants. The next step is to classify all common themes and combine them into sub-themes to see if a pattern emerges. Once patterns emerge, it is best to obtain feedback from the informants through interviews to make sure that the identified themes are valid and to avoid misunderstanding (Braun & Clarke, 2006). The final step is to construct a convincing argument for choosing the themes. This is done by reviewing relevant literature which gives the researcher enough information to allow them to formulate theme statements and draw conclusions from the interviews in the discussion phase. However, it is important to match the themes with the literature gathered and avoid the risk of missing new themes which have not been identified previously. This will also facilitate a strong case and help the reader to understand the research process and outcome conclusion, and to understand how the findings of the research relate to the findings from other research. This will be discussed further in section 6, Data management.

Therefore, the reasons for choosing thematic analysis in the current thesis include the flexibility and the relative ease in setting up and accessing the data since the researcher had little experience of qualitative research. In addition, thematic analysis allows the researcher to easily detect common themes and summarise the findings in a way that is suited to informing the general public and academics.

3.4 Research Proposal and Objective

The research proposal was submitted to the University of Canterbury Human Ethics Committee for approval to carry out this study. The summary of the study proposal included the participants' information sheet, consent form and the questionnaire (see Appendices 2, 3 and 4). The study was approved by the University of Canterbury Human Ethics Committee on the 28th of October 2011 (Appendix 5). The research

project is a descriptive qualitative study designed to gather information rather than to test hypotheses.

The objective of this study is to review the recent CERA Christchurch earthquake draft recovery strategy, taking into account information obtained from a summer studentship about the coping strategies of refugee communities, to determine how Canterbury refugee communities can be part of the recovery strategy.

3.5 Sample Description

3.5.1 Key informants

Identifying representative samples from Canterbury refugee communities proved to be difficult due to underestimation in the New Zealand census of the total refugee population in Canterbury and New Zealand (Guerin et al, 2004). Furthermore, the majority of the refugee communities are not familiar with the operational structure of the government and/or local services. Rather, the objective was to interview a group of people who are members of, or are involved with refugee communities in Christchurch. A total of eleven key informants who were living in Christchurch at the time of the 4 September 2010 earthquake were approached by the researcher and asked for their informed consent to be interviewed. The researcher used his knowledge of the local refugee services to identify the participants, who were drawn from different agencies including Refugee Resettlement Services, Canterbury Refugee Council, health promoters, and primary healthcare providers in Christchurch. The participants were selected due to their knowledge of refugee communities as well as their expertise on local mainstream services. Potential participants who had been identified as suitable for the study were contacted individually and invited to take

part, by completing a questionnaire. All eleven of the potential key informants who were approached gave informed consent and were happy to take part in the study.

The first stage of recruitment was to send an email to the potential key informants describing the study as well as attaching participant information sheets (Appendix 2). The second stage involved calling each key informant to book an appointment for interview given their consent to participate in the study. The responses gathered from the participants were transcribed using notes taken rather than audio recording during the interviews³. The focus of the key informant interviews was to gather information about each participant's own insights about the CERA Christchurch earthquake draft recovery strategy. Following the interviews, the participants rechecked their responses to ensure their validity and avoid misinterpretation. Further, personal information including demographic data was not included in the questionnaire or the analysis, in order to protect participant anonymity.

3.6 Data management

The phases of thematic analysis are similar across different types of other qualitative research; hence these steps are not effectively exclusive to thematic analysis. The analysis phases start when the researcher reviews the comments from the interviews and begins to observe and search for patterns of interest. Analysis involves a constant evaluation of themes detected in the entire data set. Identifying the themes is a fundamental part of the analysis and continues throughout the whole analysis process.

Researchers engage differently with the literature relevant to their analysis, with some arguing that early reading can narrow their analytic field (Braun & Clarke, 2006). Others argue that engagement with the literature can improve the analysis by

³ See the discussion chapter p. 77

providing extra evidence to support the validity of their findings (Tuckett, 2005). As a result, there is no one right method for thematic analysis and it depends on the researcher's objective(s) whether to engage with literature in the earlier or later stages of analysis. In this current thesis, the researcher chose to engage with the literature later in discussion in order to gain more understanding of the findings and compare them to other relevant studies. It is worth mentioning that the qualitative analysis guidelines are not rules nor is qualitative analysis a "*linear process*" that moves from one phase to the next. Instead, it is more a "*recursive process*", where the themes are revisited constantly back and forwards throughout the analysis (Braun & Clarke, 2006).

The rationale for employing a thematic approach including an analytical process was briefly outlined in the Methodology section. Nevertheless, a concise outline of the thematic analysis phases carried out in this study is summarised below.

The data gathered from the interview notes were collated by the primary researcher using Microsoft Word in order to conduct a thematic analysis. Each participant was assigned a number at the end of each interview quote included in the findings section. This was to ensure that all participants' viewpoints were included in the analysis, and to protect their anonymity. It is important that the notes maintain the verbal information obtained from the participants in a manner which reflects the true nature of their opinion. The findings were then verified by the researcher with the participants for accuracy. After becoming familiar with the data gathered, an initial list of ideas about the nature of the data was then evaluated to search for common themes. The review of all data helps to reduce potential bias created by the researcher supporting certain characteristics of the data while ignoring other aspects.

Once the researcher was familiar with the data, themes were recognised at the semantic level. The related themes extracted were highlighted in similar colour codes and located in a separate Word document. While themes were acknowledged from key informants' statements, the full statement was placed according to the relevant theme rather than partially selecting aspects of their statement related to the theme. This was to ensure the context of every statement gathered was preserved and to maintain the integrity of the participants' information gathered throughout the analysis phase.

Multiple themes that reflected key informants' statements were created for each individual transcript and the statements were placed into different themes as appeared fit. The data was examined to recognise similar themes intended by participants across their various statements. The themes were then further re-examined to make sure there was sufficient data to sustain each theme and also to determine which themes could be grouped together due to their similarity and which one needed to be broken down into separate sub-themes. After the grouping process was completed, the data set was re-reviewed to certify that the themes identified represent the data and to ensure that no themes had been missed during analysis.

CHAPTER FOUR: Findings

As already outlined, the data for this study was obtained from the transcripts of key informant interviews. While the key informants are involved in local refugee services, the themes and issues presented in this study are a reflection of their points of view, therefore, it cannot be assumed that their views are representative of the members of all local refugee services. Rather, the findings summarise the mood and perceptions of the key informants about the CERA draft recovery strategy when it was launched.

In the interview guide, open questions were used to facilitate expression of important comments, themes and issues related to the CERA draft recovery strategy. The researcher then identified the concepts which emerged from the key informants. This involved careful analysis of the notes from the interviews in order to become familiar with the data. Later in the analysis phase, the notes from the interviews were re-examined to identify several key themes related to participants' views on the CERA draft recovery strategy including; the significance of the draft strategy to refugee communities; other agencies' opinions about the CERA draft recovery strategy; the main limitations of the CERA draft recovery strategy; challenges to the CERA draft recovery strategy; and possible recommendations.

Therefore, this chapter investigates both the recurrent and overarching themes detected from thematic analysis.

4.1 Data analysis

4.1.1 Significance of the draft recovery strategy

The participants consistently commented on the importance of the CERA draft recovery strategy to greater Christchurch residents including refugee communities. One participant summarised this as follows.

“The recovery strategy is for the whole of greater Christchurch and does not look at recovery plans for any individual community. However, it seeks to set a tone for recovery, that it should be people centred, inclusive and focused on building communities where everyone can flourish. This in theory includes refugee and migrant communities.” (Participant #9)

This view was shared by multiple key informants who acknowledged and further highlighted the potential significance of the CERA draft recovery strategy to local refugee communities if it was implemented correctly. For example, it was noted that the draft recovery strategy will help enhance social coherence and community interactions.

“If the recovery strategy is implemented correctly ,it will help the refugees to engage with wider communities more , gives opportunities for refugees to cast their voice for better future, improve social reconstruction, improve their cultural practise, improve sense of belonging and enhances communities connection.” (Participants #6)

Another key informant described the nature of the CERA draft recovery strategy as

“an overarching, high level document that acts as an umbrella covering a number of recovery plans, which may or may not be led by CERA.” (Participant #4)

4.1.2 Issues of the draft recovery strategy

4.1.2.1 Awareness of the draft strategy

Many participants were able to draw attention to issues surrounding the CERA draft recovery strategy. These issues included how well the CERA draft recovery strategy was able to address its role, obligations and responsibility toward refugee communities, and society in general. Some acknowledged that the recovery strategy in theory is effective, but they questioned the proposed draft implementation stages of the recovery strategy.

“The plan is great in theory, however nothing much is done since it was launched and I believe it will take longer to implement than anticipated.” (Participant #1)

“The recovery plan by CERA has good coverage to all aspect of infrastructure recovery, but little emphasis on how and when social reconstruction will take place.” (Participant #6)

Two informants who work directly with refugee communities and are former refugees themselves noted some concerns regarding the significance of the CERA draft recovery strategy to refugee communities.

“Hard to answer whether CERA draft strategy is significant for us (refugees) since most of refugee communities are not aware of the strategy.” (Participant #1)

“I don’t think people especially those from non-English speaking countries know of the strategy.” (Participant #6)

The issue of lack of awareness continued to emerge and the following comments were made during the interviews.

“They [refugee communities] are not aware of the strategy first hand, so it is difficult to document their opinion.” (Participant #1)

“I’m not sure whether the refugees commented on the draft recovery strategy, I suspect not many of them did so since they feel they been excluded.” (Participant #4)

“Hard to say since they are not aware of the draft recovery strategy.” (Participant #10)

4.1.2.2 Communication

Issues regarding consultations and communication were raised on multiple occasions.

One example was inadequate communication leading to possible confusion between the Christchurch City Council’s consultation on the recovery plan for the central business district “Share an Idea” and the consultation on the CERA draft recovery strategy:

“The draft strategy was published soon after the Christchurch City Council shared a consultation idea on the rebuild of the Central Business District (CBD). The recovery strategy had very short consultation periods because of the legal timeframe in the CERA Act. I think many people didn’t understand the differences between Share Ideas and the recovery strategy.” (Participant #9)

Multiple key informants noted that refugees experience language barriers in general.

However, the scale of the issues involved is unknown.

“I understand the experience of earthquakes and subsequent aftershocks were daunting for everybody to say the least. However, one of my biggest concerns is the lack of understanding to the need of refugees post earthquakes, as well as the ability for the refugees to understand complex language used to explain the recovery plan. As a result, I don’t think many will understand the objective of draft recovery plan clearly.” (Participant #2)

This statement was further supported by two other key informants who best described the situation as follows;

“The refugee communities are small and sometimes marginalised by language issues. Pre-quake Christchurch agencies did not always use best practice engagement methods to include these communities and the response period would have been difficult for many. I wouldn’t expect to see reference to refugees in the strategy.” (Participant #9)

“One potential limitations of the draft recovery strategy is language barrier since the draft only in English (I think) and lack of recognition that Christchurch is a multicultural society.” (Participant #4)

Those statements further highlighted the issue of communication. Another three key informants also reported that due to the complexity of the draft and short consultation period, multiple issues were raised.

“In my Opinion CERA draft overlooks the advice from other sectors, unrealistic consultation period, mixed messages and lack of communication.” (Participant #3)

“I think there is a slow progress in term of communication and more focus on building reconstruction and less emphasis on social reconstruction as well as lack of clarity regarding strategy implementation.” (Participant #6)

“To be honest the implementation dateline is unclear. Maybe this is due to insufficient communication.” (Participant #11)

It was evident from the transcripts that the participants consistently commented on the importance of communication or lack of it during and throughout the launch of the draft recovery plan.

Meanwhile, one participant acknowledged there was some level of consultation between CERA and the refugee resettlement organisation.

“The consultation period for the draft was short, however the refugee resettlement organisation was consulted.” (Participant #9)

4.1.2.3 Collaboration

During interview, one of the other consistent themes identified by participants was their concern about the lack of collaboration between central government, local government, CERA, and other non-government agencies. The refugee and migrant services rely on local and central government services including CERA to collaborate with them. Others also elaborated that there was significant pressure to deliver adequate services to refugees and migrants post-earthquake and collaboration between services will ease this pressure much better than relying on one service to do all the ground work

“More collaboration and successful communication, better methods in sharing information is needed.” (Participant #1)

““If we talk about local government and authorities little is being done.....”
(Participant #3)

One other point of relevance is that the participants continually expressed their concerns regarding the collaboration between CERA and other agencies. When the participants were asked what methods have been used by the organisers including CERA to ensure the collaboration of refugee communities in taking part in the draft recovery strategy response, the following comments were made.

“There was some consultation but due to the diversity of languages I think it was difficult.” (Participant #2)

“If we talk about local government and authorities little has been done, but other non-government organisation they developed recovery pamphlets with different languages and engaged with community leaders.” (Participant #3)

“I don’t think much is done at local level, but some agencies developed regular meeting with communities to understand their needs.” (Participant #4)

4.1.2.4 Implementation

Another theme was the uncertainty about the implementation of the draft recovery strategy. Despite 70% of key informants interviewed being aware of the CERA post-earthquake draft recovery strategy, when they were asked questions regarding the launch and the implementation stages of the recovery strategy, the vast majority were unsure.

“I know the draft recovery strategy was launched sometime early September (2011), but I’m not quite sure of the implementation phase. I suspect it will take longer than expected, but from looks of it I can’t see any clear indication of the exact implementation timeframe.” (Participant #1)

“There have been inquiries for public comments and suggestions regarding the draft strategy, however in my opinion, comments are not the same as response and I’m afraid I don’t know exactly when the recovery plan will take place nor do I know when its expected to complete.” (Participant #2 and #5)

“To my knowledge, there were some community meeting and consultations, but to what extent the implementation stage was addressed, I’m not sure.” (Participant #6)

“Recovery is already underway but will take 20 years. For refugee communities and the organisations who work with them, the resumption of sending quota refugees to Christchurch will be a sign of recovery.” (Participant #9)

“I know that it will take around 15-20 years to execute the plan fully, but to be honest this frame is too broad which made me question the timeframe proposed.” (Participant #10)

“I’m aware that this draft recovery will take time, but I’m not sure when exactly the recovery strategy will be implemented.” (Participant #11)

4.1.2.5 Recommendation

Following those concerns, the key informants were asked to suggest key recommendations to ensure the success of the draft recovery strategy. Some commented on the language used in the draft recovery strategy and recommended the following.

“Use interpreters during community consultation and make an effort to utilise community experts and existing agencies to assist in communities support.”
(Participants #3 and #5)

“Improve communication, ease the level of English used to write the draft so it is easier to understand and can generate a better feedback.” (Participants #4 and #7)

Others drew attention to the issues of collaboration and communication by stating.

“For the refugees, they should be encouraged to take a stand and decide how they can be helped and have better involvement by officials from Ethnic Affairs.” (Participant #2)

“More balanced concentration in all aspects of recovery, better method in communication and better collaboration with public and other services.”
(Participants #6, #10 and #11)

“Better promotion methods and more consultation with other agencies. Emphasis on cultural building is significant for social connection and reconstruction (e.g. churches, parks, community gathering areas etc...).”
(Participants #1 and #8)

Finally one participant summarised the aim and the focus of CERA recovery as.

“It should include a commitment to place people especially the most vulnerable at the centre of decision making. This will ensure an inclusive, people-centred recovery which will be good for refugees (and others).”
(Participant #9)

Below is the overview of the key themes mentioned by the key informants (Table 3).

Table 2: Summary of the main themes detected.

| Themes | Participants |
|---|--------------------------|
| Good strategy | 1, 2, 6, 8, 9 |
| Lack of action | 1, 3, 5, 6, 7, 9 |
| Lack of awareness | 1, 3, 7, 8, 10, 11 |
| Lack of communication | 1, 3, 6, 8, 10, 11 |
| Lack of collaboration | 2, 3, 8, 9, 10, 11 |
| Community engagement | 2, 5, 6, 8, 9 |
| Implementation concerns | 1, 2, 3, 6, 8, 10, 11 |
| Cultural significance | 4, 6, 7, 8 |
| Significance for refugee communities | 1, 3, 5, 6, 7, 8, 10, 11 |

4.2 Summary of the findings

The main themes detected from the key informant interviews were divided into two; (1) the significance of and (2) concerns about the CERA draft recovery strategy in regard to refugee communities. Some of the benefits of the draft recovery strategy (i.e. sub-themes) included engagement with communities, improved social reconstruction and cultural practices as well as helping to assist with coping. However, other initial concerns raised (i.e. sub-themes) included the technicality of the language and the implementation timeframe of the draft as well as the issues

surrounding communication and collaboration between CERA and other agencies involved in the recovery (Figure 8).

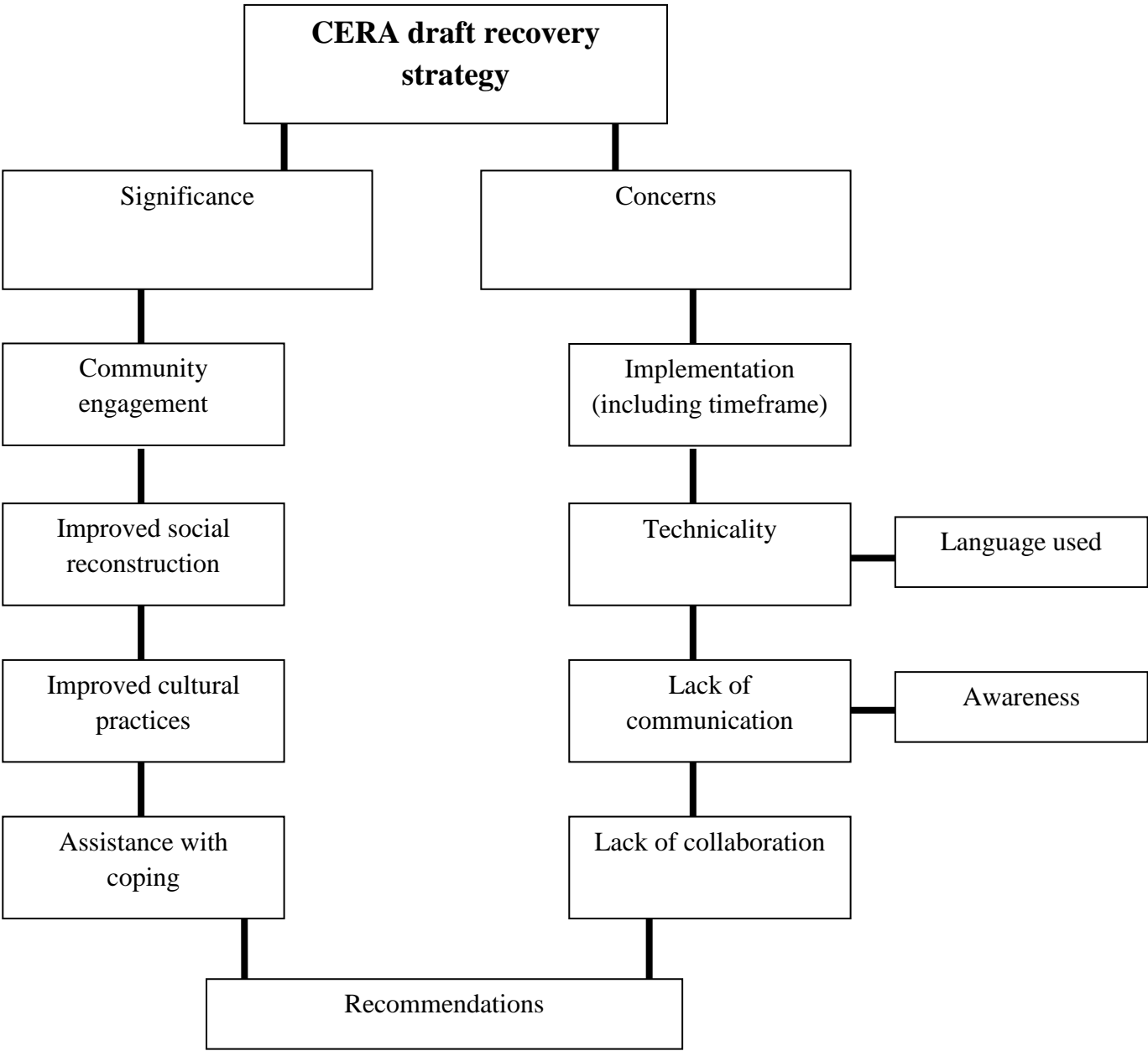


Figure 8: The key themes gathered from key informants interview

CHAPTER FIVE: Discussion

This final chapter summarises the key findings of this thesis, compares these findings to published work on the impact of natural disasters on refugees' mental wellbeing, and discusses some strengths and limitations of this thesis. Following this are some possible implications of the research and suggestions for future research. Then there are recommendations which relate to the research findings, and the final concluding remarks.

5.1 Summary of findings

The New Zealand government and the Earthquake Commission set up the Canterbury Earthquake Recovery Authority (CERA) to oversee the recovery of the greater Christchurch area given the scale of the devastation that occurred as a result of the Canterbury earthquake and subsequent aftershocks, CERA's aim is to provide coordination and enhance leadership and decision making across all sectors (CERA 2011).

This current study shows that the majority of the key informants interviewed acknowledged CERA's attempt to address the five key areas of recovery which include "*Community wellbeing; Culture and heritage; Built environment; Economy; and Natural environment*" (CERA 2011). Despite being aware of the draft recovery strategy, 70% of the key informants raised concerns regarding how practical is the draft recovery strategy.

The major objective of this current study is to investigate how well the draft recovery strategy addressed the needs of refugees. Regardless of the benefits of the draft recovery strategy to the wider Christchurch community, many of the key informants reported that most in the refugee communities were not aware of the draft recovery strategy. This could be because many people or groups within refugee communities are not comfortable in initiating involvement and making comments on government documents. Also of

significance, many refugees by nature and background tend to respect authority; they do not feel able to comment directly or criticise the local/national authorities' decisions. Rather, they wait until someone approaches them directly and invites them to take part in the decision making.

Another possible reason for a perceived lack of engagement with refugee communities is that New Zealanders tend to readily voice their opinions in regard to decisions made by local and national government, so local and national authorities may assume that other ethnic communities living in New Zealand will also do this.

These explanations are consistent with the findings described in previous qualitative research exploring mental health in refugee communities (Guerin et al., 2003; Ryan, 2007). Those findings highlighted the fact that the Western model of psychotherapy is based on individual therapy rather than involving families or communities. This model is unfamiliar to many refugees and as a result it is difficult for them to discuss mental health related topics with health professionals.

Therefore, this could explain why some key informants had concerns regarding the CERA draft recovery strategy when they were asked how the refugee communities benefited from the CERA strategy.

During analysis, one of the first themes detected was uncertainty surrounding the implementation of the draft recovery strategy. During the interviews it appeared that some participants misunderstood the differences between the theoretical draft and the implementation of the final strategy. It is also possible that some participants did not realise it was a draft. Theoretical is defined as “a collection of ideas based on previous knowledge, experience or scientific facts without reference to its practical relevance” (Prewett, 1995). Implementation, on the other hand, is defined as “the execution of a plan,

idea or policy to achieve the desired outcome or the actual application of the plan” (Van Meter and Van Horn, 1975). Before implementing any recovery plan, multiple factors should be considered⁴.

Given the differences in definition between the draft strategy and the implementation stage, there are a number of possible explanations for the uncertainty expressed by many of the key informants about the implementation of the draft recovery strategy. One possible explanation is that the implementation time-frame within which the draft recovery strategy must be taken to be successful is broad, and it will take a long time to fully execute the recovery plan. This is consistent with other literature that reviewed disaster recovery plans post Hurricane Andrew in the United States of America in 1992 and the 2010 earthquake in Haiti in which there were issues surrounding the timeframe of recovery implementation (West & Lenze, 1994; Margesson & Taft-Morales, 2010). For instance, it took several months to determine the timeframe for the Haiti health and infrastructure recovery plan, which increased the frustration of the local community and made them question the effectiveness of their city recovery plan (Margesson & Taft-Morales, 2010).

Another explanation is that at the time of the interviews, many key informants noted that the draft recovery strategy lacked specific detail about the sequencing of the recovery process and the expected timeframe for implementation. In addition, the draft recovery strategy was published soon after a consultation with the Christchurch City Council regarding the rebuilding of the Central Business District (CBD), which may have caused confusion. Due to time pressure in completing the CERA Act 2011, the recovery strategy had very short consultation periods with other agencies which justified the concerns raised by the key informants.

⁴ The detailed explanation of the factors that need to be considered before implementation is covered in section B of Chapter II.

The second major theme detected from the findings was the misunderstanding of CERA's role in the recovery of Christchurch. It was apparent from the interviews that many key informants regarded CERA as the main organisation in charge of the city's recovery. However, according to CERA, their main role is to coordinate, facilitate and work with other sectors to achieve the objective of the draft recovery strategy (CERA 2011). Therefore, CERA is not totally in charge of all aspects of the recovery, rather they focus on the five key areas of recovery mentioned earlier. Meanwhile, participants felt that CERA relied heavily on some agencies such as refugee and migrant services to guide them through the social reconstruction period of recovery, rather than working with them. As a result, a misunderstanding of each organisation's role especially in social reconstruction, and along with the short consultation period could explain some of the concerns raised by the key informants. These concerns included uncertainty about the willingness of authorities in charge of the recovery strategy to collaborate, and how serious they are about social reconstruction.

The use of effective communication channels between organisations and the public in any recovery plan is essential to establish a successful post disaster recovery. Sometimes the communication pathways function smoothly, other times communication management may face some challenges. The participants in this current research identified a number of communication problems between CERA and other agencies, including those agencies working closely with refugee communities.

Firstly, the language used by CERA in the draft recovery strategy was too complex for many refugees or their leaders to understand, according to some key informants. Recent literature on misunderstandings between organisations identified three key reasons why such misunderstandings can occur.

One reason is that the scientific terminology used to describe the plans is often not appropriately translated into language and terms that are easily understood (Starkey and Madan 2001; Van de Ven and Johnson, 2006). New Zealand has been host to over 16,000 refugees (NZIS, 2004) the majority of whom arrive with very limited knowledge of English language. Thus, the ability to grasp and understand the CERA draft recovery strategy is likely to be challenging for many, as some key informants indicated. However, the key informants were not always sure about how much the complexity of the language of the draft affected the refugee community's involvement in the consultation draft and thus, the information provided in this current study may only be an approximation to the scale of the issues. Nevertheless, the current findings were supported by other qualitative studies that documented the existence of language barriers in consultations with refugees (MacFarlane et al, 2008).

The second issue raised by the key informants in relation to communication was the lack of collaboration between agencies. Many organisations experience issues which are dynamic and interrelated; a collaborative approach will allow multiple organisations to address the needs which otherwise exceed the scope of a single organisation (Phillips, 2000). Other advantages of collaboration include sharing ideas and information, gaining access to professional skills that may only be required for a certain project and limit overlapping in services and the coordination of existing services (Fredrickson & Bull, 1995; Bodenheimer et al, 2002; Wressle et al, 2002; Herbert, 2005; Delva et al., 2008;; Charles et al., 1997). In addition, sometimes the severity of the impact of any given disaster on the underlying dynamic structure of the recovery plan is significant and therefore, a successful recovery will only be possible if there is collaboration between all agencies involved (Phillips, 2000). Organisational changes are also brought about by interprofessional collaboration which enables the breaking down of hierarchies and

encourages a more empowering atmosphere for everyone (Bodenheimer et al, 2002; Delva et al., 2008; Mead & Bower, 2002; Herbert, 2005). Lack of resources, services and funds to advocate for collaboration between agencies may well affect the longevity and the success of the recovery strategy.

A possible external aspect affecting agencies' ability to collaborate, outside of the relationship between CERA and the agencies, is the stress of the individuals acting on behalf of the agencies. This may have resulted from extra work demands and responsibilities. It is important to address all these important factors in order for the draft strategy to bring about a change at organisational level towards effective collaboration.

Communication and information management are among the most consistent challenges and problems in disaster response. Suitable information is essential to maximise decision making and resource prioritisation. The importance of communication and sharing of information was acknowledged and mentioned by nine of the eleven key informants interviewed. Communication issues, both at organisational and technical levels are vital considerations in coordinating a disaster management response (Jensen, 2008).

5.2 The impact of experiencing the Earthquake on refugees' mental wellbeing

The experience of a natural disaster such as the Canterbury earthquake and subsequent major aftershocks has had a significant impact on the Christchurch population as a whole, but particularly on refugee communities. Given their past history of experiencing wars, conflicts and trauma, experiencing earthquakes in their adopted country has arguably made them more vulnerable. Literature exploring the psychological consequences of war revealed that a large percentage of people suffer from long-term mental illnesses as a result of the traumatic events they have experienced (Fazel et al, 2005). However, obtaining a comprehensive overview regarding the impact of natural disasters (e.g.

earthquakes) on the mental wellbeing of refugees has proved to be challenging due to lack of research and previous data (Department of Labour 2008). Meanwhile, it seems reasonable to hypothesise that many of the refugees in New Zealand especially those living in Canterbury who are reported to have come from troubled countries, may be at risk of developing distress as a result of experiencing earthquakes especially if they never experienced earthquake before. Again unfortunately, there have been very few attempts to document the consequences of experiencing earthquakes and comparing the finding with the general population in clinical research.

One of the aims of the CERA draft recovery strategy is to ensure community wellbeing and preserve culture and heritage identity. However, many key informants noted that the majority of refugee communities were unaware of the CERA draft recovery strategy. Thus, the involvement of the refugee community leaders in the draft recovery consultations process was minimal. Two of the key informants mentioned that lack of interpreters and direct community consultation could explain the lack of response to the draft recovery strategy from refugee communities.

Another equally important potential explanation for the lack of refugees' involvement in the CERA draft recovery strategy could be related to their past experiences in dealing with the local authorities. However, this assumption reflects the researcher's background as a refugee and his knowledge of refugees' perceptions of authorities. Nevertheless, Knox and Kushner noted in their book (1999, p.282) titled "*Refugees in an age of genocide: global national and local perspectives during the twentieth century*" that refugees post genocide are less likely to get involved with local authorities, even in a new country, due to their past experience (cited in Kushner, 1999, p.282).

However, despite the lack of awareness and the experience of traumatic events, many of the key informants interviewed concluded that refugee communities alongside the general population showed remarkable resilience, a view which is consistent with Pahud et al (2009), a recent study of Canterbury refugee communities.

5.3 Strengths and limitations of the study

5.3.1 Strengths

This study was undertaken to review the recent CERA draft recovery strategy for Christchurch post the 2010/2011 earthquakes and subsequent aftershocks, to determine how Canterbury refugee communities could be a part of the recovery strategy. As well as representatives of refugee communities, several key informants from different services which worked closely with refugee communities were interviewed. The diversity of key informants was a strength of the current thesis because it provided a wider understanding of the significance of the draft recovery strategy to refugee communities.

The key informants interviewed were carefully selected to provide a range of views. Most of the participants worked for local agencies which have little or no affiliation with CERA. One informant was employed by CERA although their inclusion was unlikely to bias the findings. However, the findings of the study were not intended to be representative; rather the research was designed to identify themes and views from a range of participants.

The interviews used open-ended questions, allowing the participants to answer in detail. Thus, it allowed the researcher to capture detailed information that was relevant to the analysis. Also, the interview transcript was done by note taking only not audiotape. The idea behind note taking was to show the participants that the primary researcher was interested in documenting their key comments, not just listening to them, also to avoid the possibly inhibiting effect of audiotaping interviews. Another method used was checking

back with the key informants after documenting their feedback to maximise the accuracy of the findings and avoid misquotation.

5.3.2 Limitations

Some of the key informants admitted that they had not read the CERA draft recovery strategy in full. This could have led to some measure of information bias resulting in some participants over estimating their knowledge of the draft strategy (Kushner, 1999). Overestimation or higher expectations by the majority of the participants could explain the misconception about the roles of Christchurch City Council and CERA addressed earlier.

The primary researcher is a former refugee himself, and by investigating refugee-related issues this may compromise objectivity (Jacobsen & Landau, 2003). Thus, it is possible that the primary researcher was not able to maintain independence when developing the methodology, conducting the interviews and analysing the findings. On the other hand, the background of the researcher could act as a strength to the study because it encourages the participants to respond to the questions and address their concerns openly. However, steps taken to reduce the impact of analytical errors included cross-validation of the findings by two experienced supervisors independently, and reviewing the findings of relevant published research. Meanwhile, we cannot rule out the effect of analytical bias from the current research and therefore, it is important to mention that this may have contributed to the findings.

5.4 Research Implications

The key informants who participated in this study were generally concerned about the effectiveness of mainstream services in working with refugee communities post February earthquake. The major psychological effects of experiencing natural disasters on individuals and the vulnerability of refugee communities were well documented in the

past. As such, the findings of this study are consistent with those results and highlighted the needs of refugees.

Furthermore, New Zealand is increasingly becoming a multicultural country, with people from all over the world living in our society. Despite the fact that many of these families have experienced challenging situations, in relation to their earlier life experiences, they also bring with them many strengths and positive orientations towards learning. Many key informants indicated that the refugee communities were unaware of the CERA draft recovery strategy because of (i) their past experience or attitudes toward local authority; (ii) CERA overestimation of the promotional methods used; and (iii) underestimation of the complexity and scale of the required community consultations.

Indeed, data collected from this study may help CERA and other NGOs to take a more holistic approach by supporting and acknowledging the cultural diversity of the local refugees. This study may also assist in establishing better communication channels in order to determine the best approach to motivate the refugee communities to take part in decision making. On the other hand, this study will also encourage the refugee communities, especially community leaders, to seek involvement and be active in decision making.

In the light of the findings, data collected in this study suggest that despite the appreciation of all the key informants of CERA's draft recovery strategy, many key informants were dissatisfied with the level of collaboration between CERA and other agencies, including those supporting refugee communities. Furthermore, although most of the participants in this study acknowledged the barriers and challenges to recovery, what they had not anticipated was that it would take many years to implement the social reconstruction.

If some of the concerns raised can be addressed appropriately, it will influence the social development of refugee communities and improve interconnection between refugee and mainstream services.

5.5 Recommendations

Having discussed important issues reported by the key informants, recommendations will now be presented. As discussed before, there were consistent themes about ways to improve the CERA draft recovery strategy. These themes along with the findings of this study and previous literature underpin the recommendations of this study.

- 1 Understanding refugee communities' background and culture through direct involvement will help enhance CERA's knowledge of communities' needs. One possible way to achieve this is by using intermediaries who understand and could explain the process of the draft and give advice to the refugee communities.
- 2 Language translation of recovery strategy documents and language assistance in consultations with refugees are essential to maximise their involvement with the final recovery strategy.
- 3 Organisations such as CERA rely on informal responses from the general public. However, since Christchurch is a multi-ethnic society, it is necessary to improve knowledge about the basic demographic structure that shapes refugees' responses. Dialogue between CERA, interpreters and refugee community leaders about the relative merits of the CERA draft recovery strategy should be encouraged.
- 4 At the time of the interviews, many key informants commented on the length of the draft recovery strategy implementation timeframe, including the consultation period. Consequently, better representation of the timeline with a clear outline of

the different stages of the recovery and the length of the consultation period are recommended.

- 5 Developing more effective methods for communication will ensure CERA messages are delivered to the public and keep the agencies involved in the recovery updated.
- 6 There is a need to improve the level of collaboration between agencies. When considering possible collaborations, it is important to keep in mind that collaboration is a means to an end. However, it is not enough to consider the benefits of collaboration without taking into account the organisational demands required to achieve a successful collaboration. Therefore, joint efforts between different organizations are useful to enhance agencies' communication, and centralise their focus on recovery both within and between organisations, in order to achieve the desired goal.

5.6 Future Research

From the point of view of the primary researcher, conducting and writing up the current thesis is not the most significant end-product of the research. Developing a foundation for further research on disaster management for minorities is a very important part of social recovery. This research has facilitated ongoing discussions with the key informants and communities including refugees about the significance of social recovery post disaster. Despite some challenges facing CERA during the recovery phases, refugee communities would appreciate further consultations to improve their awareness, involvement and contribution to the recovery of greater Christchurch.

Future research is needed to obtain better understanding of factors that promote resilience in refugee communities. Understanding those factors will help CERA and other agencies to develop a stronger and a more effective social recovery strategy that could benefit the general population.

The findings could also be used to develop a social reconstruction framework that can be replicated with other minority groups living in Christchurch.

Although the effects of experiencing natural disasters such as earthquakes on the mental wellbeing of refugees may prove to be significant, further epidemiological research may clarify how common this is in the New Zealand context. Other methodological principles can be used to expand the research to focus on specific samples and demographic differences. This will enhance background knowledge for the local services to work with in order to ensure successful resettlement of refugee communities.

The findings of the current research also highlighted the significance of effective communication and collaboration between agencies to ensure the success of the recovery strategy. Some methods proposed included; more direct consultation between communities and agencies, simpler language used in the draft recovery strategy, and more interpreters for communities with English as their second language.

Last but not least, it would be interesting to conduct similar research after the recovery phase to evaluate whether or not the recommendations proposed in the current thesis benefit social reconstruction.

5.7 Conclusion

This study investigated the views of key informants, who work closely with refugee communities, on the CERA Christchurch earthquake draft recovery strategy. Recent studies investigating the impact of experiencing traumatic events on individual mental wellbeing identified that refugees are among the most vulnerable groups in society. The significance of the CERA draft recovery strategy to the greater Christchurch community was well emphasised by the key informants interviewed. However, the main objectives were to investigate how well the draft recovery strategy addressed the needs of refugees and how well the draft recovery strategy benefits refugee communities.

Data gathered in this study suggest that, despite the acknowledgment of the effort behind the establishment of the draft recovery strategy, there were a number of issues surrounding the practicality of the draft strategy. The key informants interviewed expressed their concern regarding the implementation stage of the draft recovery strategy. They noted that there is no clear guideline to show when the social reconstruction phase would take place and the draft timeframe proposed was too broad. Findings also suggest that the majority of refugee communities were not aware of the CERA draft recovery strategy due to the short community consultation period.

Meanwhile, data showed that the majority of key informants interviewed viewed CERA as the only organisation in charge of the city's recovery and its social reconstruction. On the other hand, according to CERA their main objective is to facilitate recovery by working with other agencies rather than take complete responsibility for the whole operation. To many key informants, this misconception between agencies and the community was due, in part, to the lack of communication and collaboration. A significant number of key informants frequently emphasised that

they felt they had been left out of the consultation and that there wasn't enough effort taken to enhance the collaboration within the wider community. The participants of this study worked closely with refugee communities and if they were not well informed and engaged with the consultation process, the refugee communities would not receive the information they need to understand the draft recovery strategy, and this would affect the community's future participation.

Finally, information obtained in this study was a snapshot of the perception of CERA's draft recovery strategy at the time of its launch. Based on the analysis, it was difficult to assess whether the draft recovery strategy benefits refugee communities. However the concerns outlined in this study may encourage the organisers of CERA to pay attention to the needs of the refugees if this has not already been done.

In parts, the study highlighted the importance of communication and collaboration following the launching of the disaster management phase. Many of the concerns mentioned were due to miscommunication and a short consultation period. The offering of multi-language translations of the draft and providing interpreters to explain the aim of the CERA draft recovery strategy has been recommended by the majority of the key informants interviewed. Indeed, the ultimate goal for any organisations in charge of recovery is to achieve stability and enhance recovery for all citizens post the traumatic experience. This will be better achieved by recognising the needs of all members of the community especially minority groups who have previously experienced trauma, and working together in a way that is easily comprehended by all citizens.

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Appendix 1: Summer Studentship paper

THE NEW ZEALAND MEDICAL JOURNAL

Journal of the New Zealand Medical Association

Christchurch earthquakes: how did former refugees cope?

Mohamud Osman, Andrew Hornblow, Sandy Macleod, Pat Coope

Abstract

Aim This study investigated how former refugees now living in Christchurch (Canterbury Province, New Zealand) communities coped after the 4 September 2010 and subsequent earthquakes.

Method A systematic sample of one in three former refugees from five ethnic groupings (Afghanistan, Kurdistan, Ethiopia, Somalia and Bhutan) was selected from a list of 317 refugees provided by the Canterbury Refugee Council and invited to participate in the study. Seventy-two out of 105 potential participants completed a 26 item questionnaire regarding the impact of the quakes, their concerns and anxieties, coping strategies and social supports. The methodology was complicated by ongoing aftershocks, particularly that of 22 February 2011.

Results Three-quarters of participants reported that they had coped well, spirituality and religious practice being an important support for many, despite less than 20% receiving support from mainstream agencies. Most participants (72%) had not experienced a traumatic event or natural disaster before. Older participants and married couples with children were more likely to worry about the earthquakes and their impact than single individuals. There was a significant difference in the level of anxiety between males and females. Those who completed the questionnaire after the 22 February 2011 quake were more worried overall than those interviewed before this.

Conclusion Overall, the former refugees reported they had coped well despite most of them not experiencing an earthquake before and few receiving support from statutory relief agencies. More engagement from local services is needed in order to build trust and cooperation between the refugee and local communities.

On 4 September 2010, at 4:35am local New Zealand time, the city of Christchurch experienced an earthquake of magnitude 7.1 on the Richter scale. The epicentre of the quake was 40 km west of Christchurch at a depth of 11 km.¹ Many residents suffered serious damage to their property, with thousands of homes temporarily or permanently uninhabitable, but miraculously no fatalities were reported. After the September 4 earthquake, there were regular ongoing aftershocks which ranged between magnitudes 2 and 5 on the Richter scale.

On 22 February at 12:51pm the city was devastated by a second major quake, measured at 6.3 on the Richter scale; the epicentre was 10 km south-east of Christchurch at a depth of just 5 km.¹ This resulted in widespread further destruction to property, including the destruction of much of the central business

district, and a final death-toll of 181, making it the second-deadliest natural disaster recorded in New Zealand.²

Earthquakes may cause profound emotional and psychological trauma to thousands of people.³ Livanou et al⁴ investigated the level of post-traumatic stress disorder (PTSD) in 157 Greek survivors of the 1999 Parnitha earthquake in a 4-year follow-up study.

They concluded that there is an association between exposure to a traumatic event such as an earthquake and the development of PTSD.

Maldonado et al⁵ conducted a longitudinal survey in Guadalajara, Mexico, to examine the factors associated with acute stress reaction. Their results showed that exposure to traumatic events such as an earthquake increases the risk of developing anxiety-spectrum disorder.⁵

Refugee communities are part of the spectrum of Christchurch residents affected by the quakes. The definition of “refugee” according to the United Nations Refugee Convention, 1951 is:

*“any person who, owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.”*⁶

New Zealand has had a long-established custom of welcoming refugees from around the world. Refugees can come to New Zealand as asylum-seekers, through the United Nations High Commissioner for Refugees (UNHCR) mandated quota programme, humanitarian migrant intake or the family reunification programme.⁷ There is an existing body of research which has consistently documented that refugees are more likely to experience PTSD due to past traumatic events or political violence.⁸ There is also evidence of the resilience of former refugees.⁹

The 4 September 2010 and 22 February 2011 Christchurch earthquakes and subsequent continuing aftershocks have had a significant impact on the Christchurch population as a whole, but, arguably, particularly on refugee communities whose location, circumstances or past history have made them more vulnerable.

In this study we investigated how the refugee communities responded to and coped with the 4 September and subsequent earthquakes.

Method

A total of 105 former refugees aged over 18 years, who were living in Christchurch at the time of the 4 September 2010 earthquake, were systematically selected every 1 in 3 from a list of 317 refugees provided by the Canterbury Refugee Council. The participants were drawn from five ethnic and geographic groups of former refugees, representing major and different communities; Afghanistan, Kurdistan, Ethiopia, Somalia and Bhutan. It may be noted that earthquakes are very rare in the Horn of Africa, though not infrequent in Afghanistan, Kurdistan and Bhutan.

Former refugees belonging to any of these groups were eligible for inclusion in the study provided they were resident in Christchurch at the time of and following the 4 September 2010 quake. Potential participants who had been selected for the study were contacted individually and invited to take part by completing a questionnaire regarding their experience of the September 4 earthquake and aftershocks, and how they had coped. All those contacted agreed to participate and so, after obtaining verbal consent, information sheets and consent forms were posted. Each interview lasted not more than one hour. All interviews were conducted by the first author, who was himself from the Somali refugee community, and, for the subjects comfort, conducted in their home.

Interviews were structured, with a 26-item questionnaire which included questions on the participant's experience of and response to the quakes, their coping processes and level of support, past experience, and demographic information. The questionnaire used a 5-point Likert scale (1='not at all' and 5='extremely').

After the 22 February 2011 quake, and part way through the study, just under one-third (N=33) of the sample evacuated the city and were lost to the study before being interviewed.

All statistical analyses were done using statistical (SPSS) software; significance being determined from use of the Chi-squared (χ^2) and Mann Whitney U tests at a 5% significance level.

Ethical approval for the project was given by the University of Canterbury Human Ethics Committee.

Results

After the devastating 22 February 2011 earthquake, and part way through the study, just under one-third (N=33) of the sample evacuated the city and were lost to the study. Participants lost to the study were mostly from Kurdistan (N=16) and Afghanistan (N=13); most were male and employed, and all were in the age range 25–39 years.

This loss of participants may have biased our results in that it is plausible that those leaving Christchurch may have been more severely affected than those remaining. However it was reported in the media that about a third of the residents of the city departed at this time. Most have since returned. As the circumstances in which the participants fled could not be controlled the best option we had was to continue interviewing those who wished to stay and take part in the study.

Seventy-two participants (69%) out of 105 completed interviews; 40% from Somalia, 19% from Bhutan, 14% from Ethiopia and Kurdistan, and 13% from Afghanistan. Table 1 shows some demographic characteristics of the participants broken down by their country of origin.

Table 1. Demographic characteristics of 72 Canterbury former refugees exposed to the 4 September 2010 and 22 February 2011 earthquakes

| Variables | Afghanistan (%) | Kurdistan (%) | Ethiopia (%) | Somalia (%) | Bhutan (%) | Total (%) |
|--------------|-----------------|---------------|--------------|-------------|------------|-----------|
| Overall | 13 (n=9) | 14 (n=10) | 14 (n=10) | 40 (n=29) | 19 (n=14) | |
| Gender | | | | | | |
| Male | 89 | 80 | 50 | 41 | 43 | 55 |
| Female | 11 | 20 | 50 | 59 | 57 | 45 |
| Status | | | | | | |
| Married | 33 | 50 | 40 | 90 | 64 | 67 |
| Single | 67 | 50 | 60 | 10 | 36 | 33 |
| Occupation | | | | | | |
| Non-employed | 0 | 10 | 40 | 45 | 7 | 26 |
| Employed | 33 | 50 | 10 | 31 | 0 | 25 |
| *Student | 67 | 40 | 50 | 24 | 93 | 44 |
| Age (years) | | | | | | |
| 18–24 | 67 | 40 | 10 | 14 | 29 | 26 |
| 25–39 | 0 | 20 | 80 | 38 | 21 | 33 |
| 40+ | 33 | 40 | 10 | 48 | 50 | 40 |

* Students are classified as being those in schools, tertiary education or language centres.

Table 2 compares how the former refugees responded to questions on to their level of worry, fear, coping, damage experienced, access to information and help received following the Canterbury earthquakes. More than 85% of Kurdish, Bhutanese, Ethiopian and Somali refugees were very worried after experiencing constant aftershocks, whereas Afghans were less worried (33%).

Across the ethnic groups, the only significant differences related to worry ($\chi^2=16.734$, $df=4$, $p=0.02$), feelings of helplessness ($\chi^2=28.859$, $df=4$, $p=0.025$), and disturbing thoughts or images about the earthquakes ($\chi^2=32.973$, $df=4$, $p=0.007$). Afghan participants, predominantly young single males, were less worried and had fewer feelings of helplessness than other ethnic groups. Participants from Bhutan, Ethiopia and Somalia had more disturbing thoughts than those from Afghanistan and Kurdistan.

Analyses by marital status and gender, using a cut-off score of 3, indicated that married participants with children were more likely to suffer from high levels of worry and anxiety than participants who were single ($U=392.5$, $p=0.012$), and more women were highly anxious than men (73% and 39% respectively, $U=396$, $p=0.002$).

Worry levels varied with age as the younger participants aged 18-24 were relatively less worried compared to older participants 40+ (58% vs 96%, $\chi^2=20.9$, $p=0.007$). Additionally, in term of occupation and experiencing fear, students reported having a

higher level of fear compared to employed and unemployed participants (88% vs 56% and 54% respectively) though the differences were not statistically significant ($\chi^2=9.2$, $p=0.34$).

When we assessed the impact of the earthquakes on the remembering of past traumatic experiences, also how well participants were prepared, we found that 72% of participants had never been exposed to traumatic events or natural disasters before, nor had they any emergency supplies for natural disasters. In addition, the majority of Somali (83%) and Afghani (67%) participants used spirituality and religious practices as a form of coping mechanism post earthquake experience, these coping mechanisms also being important, tho' to a lesser degree, for Ethiopian (47%), Kurdish (43%) and Bhutanese (21%) participants.

Twenty-nine participants were interviewed after the second major earthquake on 22 February 2011 and so we were able to compare their responses with those of the 43 participants interviewed prior to that earthquake (Table 3). Differences between the two groups were not statistically significant, except on the fear question. When participants were asked what has been their biggest fear 83% feared death and had concerns for their family safety after experiencing the 4 September 2010 earthquake, 100% after the 22 February earthquake ($U=414$, $p=0.016$).

Despite the worry about aftershocks, when participants were asked to score their level of coping from 1–5 (1=not at all and 5=extremely), over three-quarters of all participants scored 3 or more. Over 80% of all participants did not receive help or support from the City Council or Earthquake Commission, and over two-thirds reported difficulty in accessing help and information.

Table 2. Responses of 72 former refugees exposed to the Canterbury earthquakes

| Variables | Afghanistan | Kurdistan | Ethiopia | Somalia | Bhutan | Total |
|--|-------------|-----------|----------|---------|--------|-------|
| | (%) | (%) | (%) | (%) | (%) | (%) |
| Continually worry about aftershocks | 33 | 90 | 90 | 86 | 93 | 82 |
| Support from external agencies | 11 | 20 | 10 | 21 | 14 | 17 |
| Fear for family safety or death | 75 | 80 | 90 | 93 | 93 | 90 |
| How well family coped | 100 | 60 | 80 | 76 | 71 | 80 |
| *Damage to house/ properties | 22 | 30 | 30 | 55 | 79 | 49 |
| Feeling hyper-vigilant | 89 | 80 | 80 | 79 | 93 | 84 |
| Feeling helpless | 67 | 80 | 80 | 90 | 100 | 86 |
| *Avoid people/places | 11 | 0 | 10 | 28 | 43 | 22 |
| *Disturbing images about earthquakes and aftershocks | 56 | 30 | 70 | 75 | 71 | 72 |
| Difficulty accessing help/information | 100 | 60 | 70 | 76 | 57 | 72 |

Note: All percentages are for responses scored 3 or more on the 1-5 scale, except those marked by an asterisk which indicates yes/no questions.

Table 3. Percentage of responses comparing former refugees interviewed before and after the 22 February earthquake

| Variables | Interviewed before 22 February (n=43) | Interviewed after 22 February (n=29) |
|---|--|---|
| Continually worry about aftershocks | 79 | 86 |
| Support from external agencies | 16 | 17 |
| Fear for family safety or death | 83 | 100 |
| How well family coped | 77 | 76 |
| *Damage to house/properties | 49 | 48 |
| Feeling hyper-vigilant | 79 | 90 |
| Feeling helpless | 84 | 90 |
| *Avoid people/places | 23 | 21 |
| *Disturbing images about earthquakes and aftershocks | 74 | 66 |
| Difficulty accessing help/information | 68 | 79 |

Note: All percentages are for responses scored 3 or more on the 1–5 scale, except those marked by an asterisk which indicates yes/no questions.

Discussion

The 4 September 2010 and 22 February 2011 earthquakes and subsequent aftershocks have had a significant impact on the Christchurch population as a whole, including on refugee communities whose location, circumstances and past history has arguably made them more vulnerable.

The dead and injured in the 22 February earthquake included members of the close-knit refugee communities, adding to the overwhelming feeling of the earthquakes and aftershocks as a devastating and ongoing experience generating high levels of worry and anxiety, challenging personal resilience and coping resources.

The survey was designed for five former refugee groups in Christchurch, chosen because they represented the majority of the refugee population in the region. The aim initially was to investigate how they coped after the 4 September earthquake, assessing the level of anxiety across the groups, whether their experience of the earthquake and subsequent aftershocks reminded them of past traumatic experience and how supportive the local services were.

The Somali, Afghani, Bhutanese, Kurdish and Ethiopian participants were systematically selected from the refugee contact list provided by the Canterbury Refugee Council to reduce the effect of selection bias. Following the 22 February 2011 earthquake 30% of the participants excluded themselves from the study as they left Christchurch and could not be traced. However the initial sample size of 105 was adequate, though the impact on the results of the loss of 33 potential participants is unknown.

The circumstances in which the participants fled the city could not be controlled and the best option we had was to continue interviewing those who wished to stay and take part in the study.

Distressing and ongoing worry and anxiety, hyper-vigilance in expectation of further aftershocks, feelings of helplessness, disturbing earthquake-related thoughts and images, and fear of further earthquake trauma were the norm across all ethnic groups in the study.

The Afghani participants were the least anxious compared to the other ethnic groups, perhaps because over two-thirds were young and single and our results have shown that younger participants without family responsibilities were less worried than older married participants. Also, earthquakes occur occasionally in Afghanistan, and thus this population has prior earthquake knowledge and experience.

Married participants with children were more anxious than single participants, and females were significantly more anxious than males. Other studies^{8,10} indicate that females are more likely to experience anxiety following earthquakes than males and a May 2011 Christchurch media report also indicated males to be less worried than females, 55% compared to 71%¹¹. Other research reports parents as being more psychologically affected by earthquakes¹².

In terms of occupation and experiencing fear, while our study suggested that students were more likely to experience fear compared to employed and unemployed participants, these differences were not statistically significant. Whether or not students participating in our study were personally affected by the deaths of a group of students in the 22 February earthquake is unknown.

The possibility that the Christchurch earthquakes might remind participants of past trauma or distressing experiences was considered in the development of our survey. It is noteworthy that 72% of participants in our study reported having no prior experience of a traumatic event or natural disaster, and responses to open ended questions in our study indicated that the Christchurch earthquakes did not reactivate memories of earlier experiences.

Three quarters of participants reported coping either satisfactorily or well after both the 4 September 2010 and 22 February earthquakes, this being attributed by many of the participants to their strong cultural beliefs and spiritual practices. Religious and spiritual beliefs have been identified as an active form of coping which decreases the level of stress and improves the acceptance of challenging situations¹³. Whatever the mechanisms of psychological and social support, the high level of coping reported is a tribute to the resilience of the refugee communities.

A limitation of this study was the lack of a control group which could compare support of refugee and non refugee communities. Nevertheless, access to appropriate support was a major issue for participants. The majority of the participants (80%) did not receive support from local government or the Earthquake Commission, and it took some time for them to access help, two-thirds having difficulty doing so.

The low support from mainstream agencies could be an added factor influencing the level of anxiety among the refugee communities. The language barrier could also be an issue, as some refugees are not confident enough to call for help, relying on family and friends for support when difficulties or crises arise.

The issue of barriers to access to care has been raised in previous New Zealand research,^{14,15} and the resourcing of health sector responsiveness to the needs of refugees resettled in New Zealand has been highlighted in a recent policy review.¹⁶ The apparent difficulty in accessing information and help which the participants in our study experienced is cause for concern.

In New Zealand's increasingly diverse society, and particularly in circumstances such as the recent Christchurch earthquakes, more engagement by both national and local services is needed to build trust and cooperation between the communities of former refugees, also other ethnic minority groups, which are an increasingly significant part of our wider community.

Competing interests: None declared.

Author information: Mohamud Osman, Graduate Student, Andrew Hornblow, Adjunct Professor; Sandy Macleod, Adjunct Associate Professor ; Pat Coope, Statistical Advisor; Health Sciences Centre, University of Canterbury, Christchurch

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Appendix 2: Participants' information sheet



Health Sciences Centre

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Key Informant Interview Information Sheet

You are invited to take part in an interview about post-earthquake recovery planning for refugee communities.

The Christchurch earthquakes and subsequent continuing aftershocks have had a significant impact on the Christchurch population as a whole, but arguably, particularly on refugee communities whose location, circumstances or past history have made them more vulnerable.

The Canterbury Earthquake Recovery Authority (CERA) has developed a draft earthquake recovery strategy. The interview will investigate your views about the CERA recovery strategy, and any recommendations you have for including refugee communities in recovery planning.

Aim of the Study

The aim of this study is to review the recent CERA Christchurch earthquake recovery plan, taking into account information obtained from a summer studentship about the coping strategies of refugee communities, to determine how Canterbury refugee communities can be part of the recovery plan.

What is involved?

An interview with you will be conducted by Mohamud Osman, Masters student, University of Canterbury. A written copy of the questions you will be asked will be given to you. The interview will take less than an hour of your time.

Privacy

We would like to reassure you that we take the privacy of all people taking part in this research very seriously. Personal information will not be released, passed on to a third party or made public for any reason. No material which could personally identify you or your community will be used in any publications or reports on this study. Any information collected will be securely stored for five years before being destroyed.

Who is conducting the study?

This study is being conducted by Mohamud Osman, a Masters student at the Health Sciences Centre, University of Canterbury.

The supervisors for this study are:

Professors Ann Richardson and Andrew Hornblow

Health Sciences Centre

University of Canterbury

Contact Phone Numbers

| | |
|-----------------|----------------------|
| Mohamud Osman | 3544341/ 021-2944697 |
| Ann Richardson | 366 7001 ext 3786 |
| Andrew Hornblow | 366 7001 ext 3692 |

Feedback/Results

The findings from this research will help us highlight the areas needed to be improved so the refugee communities can benefit from the recovery plan. The results arising from this study will be included in Mohamud Osman's Masters thesis, which is a public document which can be accessed via the University of Canterbury library database.

**Thank you for taking the time to read this information sheet
and for considering participation in this study.**



CONSENT FORM

1. This interview is to collect information to aid the post-earthquake recovery of refugee communities in Canterbury. I have read the questions which will be asked. The study has been reviewed and approved by the Health Sciences Centre, University of Canterbury.
2. I understand that taking part in this interview is voluntary (my choice) and that I may withdraw from the interview at any time.
3. I understand that I will not be asked for personal information, but will be asked to respond in my capacity as a representative, advisor, or provider of services for refugee communities.
4. I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study.
5. I have had time to consider whether to take part.
6. I know who to contact if I have any questions about the study.

I _____ (full name)
give consent to take part in this study.

A recovery plan for the Canterbury refugee communities

Key Informant Questionnaire

1 Are you aware of the CERA post-earthquake draft recovery plan strategy for Christchurch?

Yes ☐ No ☐

1 What do you think of the CERA draft recovery strategy?

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2 What was the local response to the draft recovery strategy?

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3 In your view, how significant is the draft recovery strategy to the refugee communities?

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4 In your view, how will the refugee communities benefit from the strategy?

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5 What has been happening since the launch of the draft recovery strategy?

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6 How well has post-earthquake recovery gone so far for refugee communities?

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7 Are the refugee communities aware of the CERA draft recovery strategy?

☐ ☐

Yes No

8 Are members of refugee communities involved in the draft recovery strategy?

Yes

☐☐

9 What methods have been used by the organisers to ensure the collaboration of refugee communities in consulting on the draft recovery strategy?

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10 What are the advantages for refugee communities of the draft recovery strategy?

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11 In your view, what are the limitations of the draft recovery strategy?

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12 Do you have any recommendations on information you think should be included in the draft recovery strategy?

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13 What are some of the challenges ahead?

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14 When is the implementation stage of the recovery strategy expected?

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Appendix 5: Human Ethics Committee approval

HUMAN ETHICS COMMITTEE

Secretary, Lynda Griffioen
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2011/95/LR

28 October 2011

Mohamud Osman
Health Sciences Centre
UNIVERSITY OF CANTERBURY

Dear Mohamud

Thank you for forwarding to the Human Ethics Committee a copy of the low risk application you have recently made for your research proposal “An earthquake recovery plan for Canterbury refugee communities”.

I am pleased to advise that this application has been reviewed and I confirm support of the Department’s approval for this project.

With best wishes for your project.

Yours sincerely

Michael Grimshaw
Chair
University of Canterbury Human Ethics Committee

